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UNITED NATIONS DEVELOPMENT PROGRAMME

ETHIOPIA

ESTABLISHMENT OF AN ELECTRICAL AND ELECTRONICS INSTITUTE

(EEI) ETH/88/011

REPORT OF THE EVALUATION MISSION

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It is this kind of assistance and support which made it possible for the Mission to deal vith a considerable number of complex issues in a record time. This assistance was essential considering that the project operations were entirely stagnant and that the national and expatriate project personnel, other than the NPD, was inexistent.

The Team Leader, on behalf of his colleagues and on his own behalf, would like to remind the organizers of this type of missions that Thinking Time and Analysis Time are important to develop a coordinated response. We barely had enough time to accomplish that before the Mission debriefing of the three partners, but were less successful to write a full report together.

The Team Members consider this experience to be most enriching and sincerely hope that the findings and the recommendations will serve the establishment and functioning of the Ethiopian Electrical and Electronic Institute.

Damian Lascu
Mission Leader

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I PROJECT CONTEXT.

1.1 Country Context

1.1.1 Ethiopia is one of the poorest countries in the world, with a per capita GNP estimated at US$130. About 60 percent of the population live below the absolute poverty level. From 1970 to 1980, the real annual GDP growth rate averaged just 0.6 percent per year. In the 1980s, the growth rate accelerated somewhat with an average of 1.7 percent recorded for the period up to 1986/87, but it still lagged behind the estimated 2.9 percent annual increase in population. Consequently, per capita incomes have fallen over the past two decades.

1.1.2 Prior to May 1991, a civil war raged in Ethiopia for almost two decades. By the late 1980s the civil conflict entered into its most intensive phase. Rebel forces, led by the Eritean People's Liberation Front (EPLF) in Eritrea, the Tigray People's Liberation Front (TPLF) in Tigray, and the Oromo Liberation Front (OLF) in the eastern and western regions staged increasingly bold attacks on a number of fronts. The final thrust, which began in early 1990 led to the defeat of Government troops in all major regions and to the ultimate overthrow of the Mengistu regime in May 1991. The Ethiopian Popular Revolutionary Democratic Front (EPRDF), an alliance of former rebel groups, formed the Transitional Government of Ethiopia consisting of an appointed, broadly based Council of Representatives and the Council of Ministers, with an undertaking to establish a democratic constitution leading to free elections within two to two-and-a-half years. A separate, provisional administration was formed by the EPLF in Eritrea under an agreement to hold a referendum within two years on the question of Eritrean independence.

1.1.3 Many years of excessive military spending, the diversion of productive enterprises and institutions to support the war effort, extensive war damage, and inappropriate economic policies have left the economy and its infrastructure in a devastated condition, matched by a massive social crisis of millions of displaced persons, refugees, demobilized soldiers, homeless, maimed and unemployed people. The effects of war were worsened by years of famine mitigated only by large volume of relief aid. Although the end of the war provides an opportunity to reconstruct Ethiopia's torn economic and social fabric and to begin to shift the emphasis from relief aid towards economic development and growth, the extent of social deprivation and dislocation is such that special measures will needed to be taken for mitigating

the worst impact of the war. Part of these measures constitutes the current Economic Recovery and Reconstruction Program (ERRP) assisted by the international community. The ERRP represents a component of the broad policy of the Transitional Government directed in its first two-years phase primarily at improving employment and safeguarding vulnerable groups. ERRP, whose cost is estimated at US$657 million out of which 92% in foreign exchange, has a duration of 30 months, starting April 1992. The main contributors are the World Bank, African Development Bank, EEC, European Investment Bank, Germany, Japan, the Netherlands, Sweden, UNDP, USAID, and the Government. ERRP represents in Ethiopia a preparatory stage of what is known as the "structural adjustment program" in other developing countries.

1.1.4 Several programs and projects of external technical and financial cooperation are being developed within ERRP aiming at: (a) policy changes that would control the fiscal deficit and with it inflation, provide essential incentives for increased production, and remove major constraints on the development of the private sector; (b) measures aimed at strengthening the human resource base, which would require an urgent response to food insecurity; (c) initiatives to reduce poverty through employment generation and improved incomes; (d) actions to improve basic health, nutrition, and other services and facilities for the most disadvantaged groups; (e) programs that would lead to reduced population growth; (f) measures to improve the productive sectors, which would include improvements in agricultural inputs and services; (g) restructuring and improving the performance of remaining state enterprises; (h) supporting the growth of private industry and commercial farming; and (i) improving the essential infrastructure and services on which this growth depends, especially roads and transport. There would also be three important cross-cutting themes in this program: (1) environmental rehabilitation and conservation; (2) measures to remove the constraints on women's economic role and potential contribution; and (3) programs to build capacity and strengthen institutions and Government agencies vital to the development effort.

1.1.5 Notwithstanding enormous difficulties mentioned above and several specially designed programs to deal with them on short and mid-term basis, it is a widely recognized fact that Ethiopia has had a tradition of effective project implementation, but performance has been negatively affected in the last few years by war, budgetary constraints, and a lack of essential local inputs, especially construction materials. With the end of the war and a recommencement of the flow in essential inputs, implementation performance is likely to improve. The Government and its development partners continue with critical review of the project and programs portfolio to carry out essential restructuring to realign existing projects to new priorities, and to review implementation priorities.

1.1.6 In view of the place and role of this project, it appears justified to provide this Evaluation Report with a brief look into both industry and education, two sectors with special roles to play in its life: the first, as main prospective user of EEI technicians and services; and, the second, as provider of the main inputs (twelve graders and teaching staff) to the Institute.

1.2 Industrial Development

1.2.1 Industry in Ethiopia is just celebrating its first centennial. By the 1950's, it started to be capital intensive and, although it still maintained a few backward linkages into other sectors of the economy. A profound change in the structure of ownership and management took place in 1975, when the Government nationalized virtually all the large-scale industrial enterprises owned by foreigners and Ethiopians alike. From that date, the industrial sector has been dominated by industrial public enterprises (IPEs). In 1985/86, IPEs accounted for 95% of Manufacturing Value Added (MVA) and 93% of employment of all medium and large enterprises. Private ownership was restricted to a narrow range of small-scale industrial activities, while access to inputs and foreign exchange was restricted as the Government gave priority to the public sector. Moreover, the transfer of most large-scale industrial enterprises to public ownership was not achieved smoothly. Virtually all the expatriate managers and skilled staff left Ethiopia, leaving behind few skilled Ethiopians to take their place.

1.2.2 However, industry's performance improved rapidly in 1978/79 and 1979/80 when the sector registered growth rates of 15%. Idle factories were repaired and brought into operation, raw material and manpower constraints were alleviated. By the end of the decade, industrial public enterprises registered capacity utilization rates of 70 to 100 percent. These improvements could not be sustained in the medium and long-term, as structural deficiencies have become surfacing despite continuing Government investment in industrial projects. The basic reasons are as follows:

- o preference for modern and expensive equipment with increased dependence on imported capital goods and spare parts;
- o new projects place a heavy burden on the balance of payments;
- o large-scale, capital-intensive plants are an expensive means of

generating employment when compared to medium and small-scale operations;

- o new projects exacerbate the shortage of skilled managerial and technical staff;
- o concentration of investment in a few projects has gone hand-in-hand with geographical concentration of industrialization, introducing additional strains in the distribution services, in a country where transport services are weak, both in the distribution of products to their markets and in the supply of raw materials.

1.2.3 Industry is not a major employer in Ethiopia. In 1986 medium and large scale enterprises employed a total of 90,845 persons. This represents less than .5% of the total economically active population resident in urban areas. However, while there are plentiful unskilled manpower resources, Ethiopian economy faces an acute shortage of skilled and professional workers. The Ministry of Industry's allocation of skilled managerial and technical staff has, consistently, been lower than the number requested. As a result, the skills profile of the industrial sector is biased heavily towards the unskilled and semi-skilled categories. Although the proportion of professional staff has increased steadily in recent years, professionals still only accounted for 1.3 percent of the workforce in 1985, and all skilled categories only 10.7 percent. Managerial and executive staff are well qualified (66 percent holding degree or diploma qualifications in 1985) so too are most of the administrative staff, but the skill profile lacks depth. In 1985, only 14 percent of production workers had vocational training, while the educational achievement of 38% was limited to being able to read and write and only 22 percent had received secondary education.

1.2.4 Within the private sector, small and timid as it is, the skill shortage is even more acute. Highly qualified personnel are directed away from private enterprise. Technical school students have recently been allowed to find employment through labor exchanges but they are discouraged from taking up posts in the private sector by lower wages and perceived job insecurity. Both public and private sector management regards the shortage of skilled staff as one of the main hurdles to industrialization in Ethiopia, particularly in the development of industries using modern technology. Ethiopia suffers from a shortage of trained and experienced managers within the public sector, a problem compounded by the fact that virtually none of the managers currently employed by the public sector have little or no experience of working in a market oriented, competitive environment. Nor is the management structure suitable for a market oriented system. Departments crucial to the success of enterprises in a market oriented system are poorly developed in marketing and public relations, for instance.

1.2.5 Female participation in the industrial workforce has been encouraged. By 1986, 28,282 women were employed in the manufacturing sector, ten thousands more than in 1977. Progress has been made in bringing women out of traditional office occupations onto the shop-floor. Apart the fact that women are generally less paid for the same type of work than men, opportunities for technical and vocational training and thus for higher level managerial jobs, are narrower for women than for men. Other constraints on female participation include the absence of sufficient day-care-facilities and inadequate maternity leave. Briefly, Ethiopia does not seem to be determined to make an effort in this area. A much needed and credible national consensus and strategy to bring the woman in the main stream of development is long overdue. In any case, the Mission believe that setting as a target 15% of the EEI human component (staff and trainees) be female by the year 2000 would be an achievable one.

1.2.6 Establishment of a national engineering capability is now regarded as an essential step in the development of Ethiopia's industrial sector and has been given priority in the FYDP 1990-1994. Whilst developing a skilled workforce, engineering projects will reduce dependence on a range of imported machinery and spare parts, thereby strengthening linkages within the industrial sector, and provide mechanical inputs to other sectors of the economy.

1.2.7 At present, there is no electronic industry as such in Ethiopia. The Ministry of Industry considers that this is an area which might be developed in the future through the installation of assembly operations. It appeared not very long ago that necessary finance was syndicated for an electronics complex, with a planned capacity of 300,000 radios, 20,000 black and white and 5,000 color television sets per year. Feasibility studies were also conducted for a factory manufacturing electrical equipment and appliances. It has also been expected to produce electrical motors and transformers. It was not entirely clear to the Mission to what extent these industrial objectives are maintained among the priorities of the Transitional Government. If the electronic products of Ethiopian origin are not yet on the market, important quantities are being imported for several years for utilization in telecommunications, civil aviation, industry, government, radio and television, etc.. Technical personnel for operation and maintenance of this equipment is trained in the country and abroad.

1.2.8 The needs of industry for and supply of diploma and degree graduates by subject area for the period 1984/85 to 1988/89 are as follows:

Course and Qualification	Requested	Supplied	Deficit (-)	Surplus
Administration	646	219	-427	
Technology	831	339	-492	
Science	14	13	-1	
Total Number Dipl. Grad.	1,491	571	-920	

These figures are self-explanatory. They are even more relevant if compounded with deficits in diploma and degree graduates resulting from periods of studies disruption at the AAU and other schools, and the new requirements resulting from a successful implementation of the Recovery and Reconstruction Programme.

1.3 Education and Technical Training

1.3.1 As far as the training of technicians is concerned, the number of graduates from technical and vocational schools specialized in electricity and electronics for the period 1987 to 1990 is as follows:

Course	1987	1988	1989	1990	Total
Electricity	218	361	254	204	1,037
Electronics	67	75	91	81	314

1.3.2 Two of the main producers of technicians in electricity and electronics were visited by the Mission:

(1) Ethiopian Civil Aviation Training Center (CATC), an in-service training institution of excellence, established by the Government with the UNDP assistance for the benefit of Ethiopian Civil Aviation Authority and of other Civil Aviation authorities in the Africa region. So far, more than 250 technicians from the African and other continents were trained at the ECATC and several thousands from Ethiopia; and, the second,

(2) Ethiopia Telecommunications Training Institute (TTI), an in-service training facility for satisfying the needs of the Telecommunication Department of the Ethiopian telecommunications and to some extent of those of other African administrations.

1.3.3 A relatively modest number of electrical and electronic engineers is produced every year by the Addis Ababa University. To them, an even smaller number is to be added: diploma and degree graduates trained abroad. They are used in professional and managerial positions in the central administration, in public companies involved in production or services and in state trade companies. Few are in the private sector now timidly emerging.

1.3.4 In the framework of the formal education system, there are about fourteen post-secondary institutions that provide technical training in courses lasting two years. Six of these institutions produce agricultural technicians, three train teachers, two offer courses in industrial technology, two offer courses in para-medical subjects and one trains book-keepers and secretaries. Two of these institutions are training people for the economy at large and the Bahar Dar Polytechnic produces 230 graduates a year in six trades: metal technology, agro-mechanics, industrial chemistry, textile technology, electricity and carpentry, while the Commercial School in Addis Ababa produces some 200 secretaries and book-keepers a year. In addition, there is a relatively large number of students attending evening classes in the seven junior colleges and two universities. Despite this, it is the Mission impression that there is a need to increase the supply of middle level technicians. Moreover, it is abundantly clear that the Ethiopian education system does not provide high-level technicians, an important category to fill a mid-management gap at the workplace, and in any case the system has no particular concern in respect of providing such technicians in the field of electronics which is expanding rapidly in all branches of the economy and which will have an essential role to play in a world of competitiveness.

1.3.5 Higher education has grown considerably since the revolution. The number of regular day-students has increased from 4,000 to 16,000, and the number of students attending evening classes has risen by a comparable proportion (these are figures established in 1982, before the civil war). There are two types of courses offered at institutions of higher learning. The first consist of two-year diploma courses offered at a number of junior colleges and other institutes which produce essentially middle-level technicians in a variety of subjects. the second consist of four-year undergraduate courses, and a few graduate courses, offered at two universities in Addis Ababa and Asmara and at the Senior College of Agriculture at Alemaya. Enrollments in degree courses have grown much more rapidly than in diploma courses, a persisting tendency explained by local conditions only. The most worrying aspect of this increase is the overcrowding of classrooms, the insufficient number of books and the inadequate laboratory and workshop facilities. the Mission was given to understand that the higher education system has for long been starved of capital funds and consequently, apart from some expansion of buildings and facilities at Addis Ababa University, there has been very little investment during the last seven or eight years. This is bound to affect the quality of education offered by the system. The Mission considers this finding important in order for its recommendations in relation to the EEI assistance to be well focused and correctly directed.

1.3.6 It is interesting to give a glance to the output of the entire national educational system as a potential base for producing technicians at various levels of instruction, in line with the needs of the users.

Student Enrolment, Educational Level for Selected Years

School/Level	1975	1982	1986	1994(planned)
Grades 1-6	957,301	2,374,362	2,448,778	5,248,000
Grades 7-8	124,584	248,704	363,132	879,100
Grades 9-12	64,213	238,428	292,385	387,300
Technical Schools		4,100	4,800	6,000
Further Education	8,200	14,985	18,436	28,740
TOTAL:	**1,154,298**	**2,880,579**	**3,122,731**	**6,543,140**

1.3.7 Considering that only 36% of the Ethiopian children of school age have actually access to education, and that the chances of those getting into the school and enter higher education or at least into a post secondary form of training, including technical, are extremely dim, it results that those who reach the finish line are expected to be not only dedicated and hard working but also very well equipped professionally and psychologically to cope successfully with the variety of challenges specific to the Ethiopian workplace. Usually, the Ethiopian technician or engineer performs in an environment where the volume of responsibilities would require extra efforts and high professional qualities to perform normally, where the workplace conditions of work safety are low and the monthly take-home pay is one of the lowest in the world.

1.3.8 Concluding on the state of the human resources development, the UNDP Fifth Country Programme for Ethiopia states that in spite of improvements made, the majority of the Ethiopian people are excluded from education and health services. The human development index for 1991 of 0.173 ranks Ethiopia 138th out of 160 countries. Serious urban-rural and male-female gaps exist. The potential contribution by women to development programs is not adequately considered. Poor rural infrastructure and services prevent increased agricultural production and encourage rural-urban migration.

1.3.9 There are six multi-sectoral, national programme areas in which the fifth UNDP Ethiopia programme has allocated resources:

a. food production, food security and nutrition;

b. improvement of resource-population-sustainability balance;

c. capacity-building in human resource development in both the public and the private sectors;

d. disaster prevention preparedness and mitigation;

e. management of economic and technical change, in both the public and the private sectors; and

f. economic recovery and reconstruction.

1.3.10 The program area within which the project Electrical and Electronic Institute is c, above. During a briefing of the Mission by the UNDP Resident Representative in Addis Ababa he has confirmed that the project is among those competing for UNDP assistance within the fifth programme.

1.4 Electrical and Electronics Institute (EEI)

1.4.1 The decision to set up the institute was made after more than ten years of extensive studies by the Government. The decision took into consideration several key factors of economic, social, strategic and other nature as well as the aspects related to the priority-affordability within the global context of the development of the country.

1.4.2 The institute was setup based on a Government investment in infrastructure of about Birr 15 Million. UNDP assistance was requested by the Government and it has been granted under a preparatory form: project ETH/88/011, with a contribution of US$678,000, approved in May 1991. UNIDO was nominated executing Agency for UNDP.

1.4.3 The institute is conceived as a technical training institution, with entry level requirements based on successful graduation from secondary school (12th grade). The education at the Institute is planned to last six semesters (4 normal sessions and 2 summer sessions).

1.4.4 The objective of the institute is to train Electrical and Electronics Industrial Technicians at middle level and Engineering Technicians at high level, for the electrical power, electronics telecommunications and other industries.

1.4.5 the institute was placed under the aegis of the Ministry of Mines and Energy, which nominated the Ethiopia Electric Light and Power Authority (EELPA) to play the role of implementing agency for the UNDP project.

II. PROJECT IDENTIFICATION, CONCEPT, DESIGN, AND INSTITUTIONAL ARRANGEMENTS

2.1 Project Identification

2.1.1 The need for the Institute has been firmly established in 1983 by a Ministerial Committee especially assigned by the Ministry of Energy and Mines to that effect. The Government mandated Ethiopian Electric Light and Power Authority (EELPA) to carry out the implementation of the project, allocating the necessary resources for the infrastructure and other inputs. The Government also undertook to mobilize external assistance for the Institute.

2.1.2 The need for the Institute should be understood in the context of significant expansion of two public companies, EELPA and ETA (Ethiopian Telecommunications Authority), through capital investment, and in the context of diversification and technological progress of these two industries. If this need, which was first identified by Electricite De France in 1973, could somehow be mitigated through other means for some time, it only became more acute with time. Consequently, funds were allocated by EELPA and the infrastructure was erected, and,in 1991, UNDP joined the project and provided assistance for the preparatory activities. EELPA effort was financed based on funding from its own budget. As the biggest and the strongest public enterprise in the nation, EELPA's commitment was expected to be kept firm in the short, medium and long term, in line with its vital interests.

2.1.3 However, dramatic and not entirely expected changes have occurred in the political and social spectrum of the country in a relatively brief span of time. Their impact is multifaceted. To alleviate them, an Emergency Recovery and Reconstruction Programme has been agreed and put into effect by the Ethiopian Government and the international community. Among various measures, a drastic but unavoidable devaluation of the national currency to eliminate policy, economic and other distortions accumulated over many years of planned economy rule went into effect, with a immediate disastrous short-term impact on the economic and social fabric of the country. EELPA was severely hit. From a prosperous and powerful national enterprise, it has become a problem to itself and to the Central Treasury. By stringent necessity, the EEI could not be given the same unlimited financial and other support as before, although EELPA's basic interest in the project has not diminished. The authorities believe that the financial situation of EELPA will definitely improve, once the new realigned tariffs for its services will take effect.

2.1.4 The ETA, although financially strong even after devaluation due the significant foreign exchange component of its income, can not and will not replace EELPA in its role vis-a-vis EEI. The reason is simple: ETA was anticipated and is more than likely to remain a secondary user of the EEI services. ETA has already a strong in-service training center to satisfy its most urgent development needs in technicians. The higher qualified segment of them expected to be trained at EEI, although important and urgent, does not represent a sufficiently strong reason for ETA to bear the entire operational costs of the EEI.

2.2 Project Concept

2.2.1 The project concept is simple, straightforward, based on the clearly identified need of high level technicians to fill a generally recognized and well identified gap between two distinct categories: highly qualified workers, and engineers. This gap is not specific to the EELPA, ETA, or to the Ethiopian economy only; it is a severe reality in most developing countries. This, in fact, determined the initiators of the project to envisage the setting up of a relatively large, high level technical school of excellence for the benefit of the two companies, of the Ethiopian industry in general, and for that of other interested countries. All these ambitious prerequisites could render the most viable project unrealistic, risky and costly in a country where the political, economic and social environment recommend the maximum possible restraint as well as special caution in allocating public funds.

2.2.2 The project approach wants to be traditional, simple and logical and to a large extent succeeds. EEI starts on a new land, building new, simple but functional infrastructure; it provides new technological means for training the teaching staff and technicians, and it even provides that the first generation of trainees to be supplied from two sources only, EELPA and ETA, to ensure smooth starting of the EEI. It goes even further, by conceiving from the start strong links to be established with foreign schools of good technical reputation abroad and with similar entities in developing countries for south-south cooperation.

2.2.3 As it will be seen, the division of the EEI program into three distinct parts: 1) preparatory phase; 2) full-fledged implementation or development phase; and, 3) the consolidation phase, should be considered in principle realistic and well-conceived.

2.3 Project Design

2.3.1 The original logical framework of the project, the strategy, the immediate objective, outputs and activities, are well conceived and coherent and normally should have produced the intended effects. The expertise to be provided for ensuring adequate project management, assistance in curricula for various sections of the academic programs, as well as for the selection of equipment was commensurate with these tasks, qualitatively and quantitatively, and in line with technical and academic requirements. Recruitment and training of the instruction staff and the enrollment of the trainees should have resulted in full and correct implementation of the preparatory activities. This did not happen and the blame should be placed first of all on the project design:

a. Training engineers abroad to obtain minimum but sufficient accreditation needed for Master Degree is time consuming and expensive.

b. This also implies, in practical terms, postponement instruction at the EEI for several good years, or making the project even more expensive by starting instruction based on short-term hiring until EEI permanent staff return from abroad.

c. The cost of long training abroad is exorbitant, not affordable and not even justified in case of Ethiopia.

d. This approach has the risks of non return of candidates.

2.3.2 A pertinent question seems to be whether Master Degree level should be a must for instructing "high level" technicians or whether a good engineering experience in teaching, up to a certain proportion, could not make up successfully for that degree. While the Mission in this Report will continue to consider Master Degree (M.Ed.) as a condition for EEI instructors, it expects to see this issue debated with realism and open mind by the concerned parties.

2.3.3 The next remark related to project design is addressed to the project development objective, which, in the opinion of the Mission, is somewhat ill-defined. It, in fact, it was defined as the basic project activity (training), needed to reach the development objective.

Correctly, this objective should be "to satisfy national critical needs of highly-trained technicians in the area of electric power and electronics, an acute gap in technical manpower requirements of Ethiopia." Substantively, however, it is believed that this objective was correctly understood by the project formulators and accepted as such by the participation parties and by the implementation team.

2.3.4 Assuming that the preparatory phase would have been executed as designed and all the agreed outputs obtained, then the second phase, or more precisely, the development phase of the project, could have been implemented without strong demarkation between the two phases. As things stand now, there is a strong, sensitive gap between the preparatory phase and the second phase. This is a negative, unforeseen development, totally underestimated by the project design. In addition, as it will be seen latter, the preparatory phase has been radically modified during the implementation and none of these modifications have been to the advantage of the project. Consequently, the present situation is briefly as follows:

a) About 80% of the projected infrastructure was implemented. The continuation of the construction work depends entirely on the availability of Government funds.

b) The expertise component has been implemented without executing integrally the preparatory work, such as program curricula for training of instructors.

c) Elimination of EEI instructors and advancing the impression that "twinning" could be a partial but a reasonable substitute, is technically and strategically unacceptable. Consequently, no permanent academic staff was appointed and training of instructors remains a simple desiderata.

d) Doubling the allocation for equipment by requesting more than US$200,000 additional funds from the UNDP and acquiring equipment for 150 trainees, while, the project had become aware that the total number of trainees would not be higher than 90, resulted in about half a million in technically complex and highly sensitive equipment in storage. Most of this equipment is uninstalled and untested.

2.3.5 The Mission considers that most of these modifications, if not all, are harmful to the interests of the project, and that some of them were possible because of insufficient understanding of the project intimate mechanism and of the strong relationship between the project's development and immediate objectives, outputs and activities. All these modifications will have to be rectified in order for the project to be implemented correctly. It is obvious that a certain loss in project funds has already occurred and cannot be recovered. Most of the original allocations, particularly those envisaged for the training of trainers (instructors), should be reviewed at the beginning of the second phase and put in line with a realistic strategy.

2.3.6 As in many other UNDP-assisted projects, insufficient qualitative and quantitative indicators were given for the project output and no firmly-agreed timelines were set for implementation. This type of deficiencies would be sufficient to make any preliminary project workplan too sketchy to be seriously considered and followed by the participating parties. This is indeed the case with this project. The first workplan is comprehensive and in line with the original project design. Its activities are broken down in sub-activities, which usually make the project monitoring easier. Unfortunately, all the other ingredients related to the project execution are missing and therefore the plan is unusable. No comprehensive workplans have been attempted ever after.

2.3.7 The long-term character of the twinning arrangements with two overseas institutions and related sustainability benefits were overemphasized. This output (6) may take a longer time and resources to materialize. In the opinion of the Mission, the twinning as an output was placed much too early in the project's life, since direct contacts between the Institute and any foreign partner on this subject would have justification only after the firm establishment of the Institute (and there was no EEI as such in existence at that time, and there isn't one even today). Furthermore, the Mission is surprised that no special relationship was firmly established in the project document between the EEI and the Addis Ababa University, as this seems to have been one of the most natural and logical "twinning" among all. The Mission found no explanation to the fact that AAU, Civil Aviation Training Center and Telecommunications Training Center aware given relatively marginal roles in project implementation. The AAU-EEI strong relationship will make much more sense in the reviewed strategy adopted by authorities at the TRM, by moving in the country the center of gravity of training activities in favor of trainers. This strategy is meant to minimize the brain-drain likely to occur while highly train professionals are on fellowship abroad, while reducing the training costs considerably.

2.3.8 The potential benefits to be ultimately drawn by the private sector from EEI are not mentioned with sufficient strength in the project document, presumably because the political and economic importance of this sector was underlined by the Government authorities only after the formulation of the document. In the opinion of the Mission, these benefits should have been mentioned in a detailed substantive revision setting up the new project strategy and the new developmental dispositive replacing the original concept of the project. As it presents itself after the TPR Meeting, the project has a set of objectives, outputs and activities leading in one direction and a budget leading into another. Although the difference between the two seems to be mostly qualitative, it is so major that one alternative deserves UNDP support, while the second does not.

2.3.9 Considering the expected difficulties in establishing a new high-level technical school of particular complexity, the Mission felt that the overall original duration allocated for the implementation of project operations was somehow overly optimistic: the recruitment and the training of instructional staff, as well as the enrollment of trainees, are usually time-consuming operations. This is even more so when part of such instruction takes place abroad. The decision for changing the training strategy came later, after one year of project operation, when the EEI was compelled to give up altogether the idea of acquiring its own permanent teaching staff and to assign the most important function of the Institute to part-time instructors hired from EELPA, AAU, ETA, etc... This decision represents the other extreme in dealing with the same problem: originally, most of instruction of fifty EEI teaching staff was planned to take place abroad; the last decision is for the EEI to function without permanent staff at all. The Mission is simply surprised by these dramatic changes and opposes very strongly to both extremes as unreasonable. While the Mission opposition to the training abroad was just explained, the Mission feels very strongly that teaching based on part-time assignments is absolutely inappropriate for any school claiming competence in specialized technical areas, and even more so for high-level technical schools of academic excellence. In order to grow strong academically, the EEI must have its academic staff from the very beginning.

2.3.10 The project design touches on the problem of coordination so essential in the case of this project where the institutional arrangements are complex and where the number of parties involved is important and their respective role crucial. However, the Mission considers that this problem has not received adequate attention, as no formal mechanism was envisaged for the implementation of the coordination arrangements mentioned in the project document. The presence of such a mechanism from the first day of project operation would have been possible, had it been conceived as a prerequisite to the preparatory phase. The dialogue through this

mechanism would have, most probably, improved the project strategy and prevented the harmful modifications in project design decided during implementation. In addition, the same mechanism, if used properly, could have helped in preventing the present financial crisis faced by the project. As an alternative to effective coordination, isolated contacts with various partners which, even when carried out repeatedly and in good faith, have been of limited benefit.

2.3.11 Referring to the number of trainees undergoing instruction, the Mission notes from the project document and project revisions, that there is a large variation in the training capacity intended for the school, from 80 to several hundreds trainees a year. Excessive variations in the planned output of technicians by the school do not serve the project well. In the opinion of the Mission, the first-year enrollment, of 150 trainees mentioned as output in the preparatory phase, is a large number, perhaps too large to achieve quality in a school which is just being launched. A more reasonable number would be a maximum of 100, which would allow for an output of satisfactory quality. With respect to short and medium-term development, the Mission recommends that a gradual increase from 100 candidates in 1994 to 150 highly-trained technicians with two years of education ... the year 2000, and a similar increase from 0 to 100 technicians attending shorter courses during the same period would constitute a reasonable goal. Under no circumstances, however, would the Mission agree with the assignment of temporary staff as an alternative to the permanent staff. The Mission strongly believes that the permanent staff should be at least 70% of the total requirements in instruction staff and that, for the part-time staff, stringent and formal academic and pedagogic requirements be established in order to ensure the reasonable quality of teaching.

2.3.12 Finally, the Mission would have expected the project document to provide minimum of information on the following:

- o the mandate of EELPA;
- o its operational and managerial problems;
- o volume of operations and staffing by categories;
- o present capacities and planned targets;
- o physical and resource constraints, including human;
- o opportunity and cost analysis for solving the problem faced, including alternatives to the EEI;
- o full information about EELPA and ETA in-service training systems, including complementarily/duplicative occurrences possible;
- o other pertinent aspects.

2.4 Institutional Arrangements

2.4.1 The Mission inquired on repeatedly during its contacts with Government and other officials the reason for placing the Electrical and Electronic Institute under the aegis of EELPA, within the Ministry of Energy and Mines. The question arose, particularly in view of the EEI aspiration to become a well reputed academically technical school of high visibility, recognized nationally, regionally and internationally, which would place gradually its center of gravity closer to the industry. The Mission's initial reaction had been to see the Institute placed under the authority of the Ministry of Education, Department of Higher Education, while the links with EELPA and with the ETA be given preference only during the initial phase of development and consolidation of the school. However, the Mission realized that important financial and other efforts have already been made by EELPA in favor of the Institute and that there is an organic professional link between the Institute and EELPA, not mentioning the strong interest existing between the two institutions in their respective qualities of provider and user of services. These links could favor rapid development and consolidation of the Institute in view of EELPA's staff strengths and its broad support. The support provided by the Ministry of Education to the AAU seems to represent an indication that the EEI could be better off in the medium and long-term under the aegis of EELPA as availability of resources of the MOE are already stretched to the limit.

2.4.2 The Mission could not overlook the fact that EELPA is traditionally the largest and the strongest public company in Ethiopia and that it was this company which initiated and conceived the creation of the Institute in accordance with its own needs. The Mission felt that the current weakness of EELPA is circumstantial and does not constitute sufficient reason to change the institutional arrangements which prevailed during the first phase, but, rather, to preserve those arrangements and strengthen them to the extent possible, solving the unexpected difficulties generated by the lack of operational costs of the EEI. While the Mission was denied access to the ETA and EELPA management for reasons beyond its control, the Mission has studied carefully EELPA's credentials and is confident that, all alternatives considered, present institutional arrangements represent a reasonable compromise.

2.4.3 At the same time, the Mission contacts with the Ministry of Education failed to identify a sufficiently strong interest from this institution to take over EEI and to make provisions in its budget for the smooth running of the Institute. A different position was identified in its discussion with the Vice Minister of the Ministry of Energy and Mines, who

assured the Mission that efforts are being made to preserve intact the original institutional arrangements, securing, at the same time, the necessary funding for local expenses within a minimum of delay possible. The same Vice Minister confirmed the availability of funds for one year of operations and stressed his own commitment to continue the necessary efforts for short and medium-term solutions to the problem.

III. THE PROJECT DOCUMENT

3.1 Government Involvement

3.1.1 It was evident to the Evaluation Mission that the Government has participated actively and with great interest in a number of preparatory activities leading to the finalization of the project document for the UNDP assistance. Among them are: Electricite De France Study Mission of 1973, the Ministerial Commission of 1983, the UNDP/UNIDO preparatory Mission of July 1990, and others. The Government realized that the EEI, assisted by the UNDP and the African Development Fund, has all chances to become a powerful tool capable to improve significantly the performances of a limited number but key actors in the development of the national economy. Starting with the EELPA and ETA which are best equipped to assist the Institute during the launching and consolidation phases, EEI will diversify its activities thereafter in line with the new requirements of the emerging Ethiopian market. By that time EEI will achieve full financial and technological autonomy. Training high-level technicians represents also an immediate necessity of the power sector, which will continue for many years its expansion and consolidation. Assuming that the country steps in an era of peace and economic stability, the strategy aiming at strengthening national capacities over one of the most advanced branches of modern technology, electronics, seems entirely feasible and timely.

3.1.2 The EEI has enjoyed full Government support in terms of its mission and operation. This has been illustrated by inclusion of the EEI not only in the 4th and 5th Cycles of the UNDP Country Program, but also in the present 5th Cycle Country Plan. The lack of skilled technicians in the electrical and electronics area and the role of the EEI in economic development of Ethiopia is so obvious that it was felt that there was no need for a national debate. Agencies such as EELPA and ETA have agreed to contribute to the implementation of Phase I as a medium and long term solution to their own development problems. The Government, through its ministries, has indicated continued support for the establishment of the EEI and seems committed to release operating funds for the next fiscal year. Additionally, the

AAU has provided correlation during curriculum development and committed start-up backing by faculty exchange.

3.1.3 As mentioned earlier, the project document does not excel in clarity and in providing adequate information in general, but for a someone familiar with the UNDP rules and procedures, it is relative easy to understand its assumptions, reasons and the intended approaches to eliminate the existing potential constraints to the development. What is perhaps less obvious at the present stage of development in the field of electronics in Ethiopia and in other developing countries all over the world, is that there are considerable investments in electronic equipment at the work place, certainly many millions, without national capacities able to maintain, operate correctly and fully, and to repair this equipment. This situation could be translated in dramatic loss for the national economies unless projects of this nature intervene effectively. Therefore, the presence of this project in Ethiopia is based on an objective necessity. It is to be regretted that the project document does not make a sufficient effort to place the project in a correct development perspective.

3.2 Assumptions and Analysis of Risks

3.2.1 The most important assumption in a project arrived at the approval stage is that there is full agreement among the participating parties on objectives, outputs and activities, all of them supported by the various contributions in cash or in kind made during the implementation by those parties. In case of this project the parties, during the first and the only TPRM held by them, acted as if they wanted to deny almost everything they agreed one year earlier. Regrettably, the changes do not serve best the interests of the project: essential outputs were canceled and corresponding resources diverted in favor of questionable purposes; additional funding was obtained only to double the shelved equipment inventory, in a pessimist climate threatening the future of the project and following a decision to reduce the EEI enrollment by one third (which should have resulted logically in a corresponding reduction in the original amount of equipment in the project).

3.2.2 The availability of counterpart allocation to cover the EEI's operating cost was estimated as low risk in the project document. The project is facing for more than one year a new reality: because of lack of funding, the project operations are at a standstill point. The Mission was given to understand that a long term solution may not come soon and easy, although some progress has apparently been achieved for ensuring the resumption of the project

operations in the near future. No date for resuming the operations was set and no indication on the level of local funding were offered to the Mission. The Mission understand that these are not very simple questions. They relate to a set of key decisions regarding the number of instruction staff, the number of trainees, the continuation of the infrastructure programs and others.

3.2.3 The Mission was not able to ascertain the availability and the professional quality or the qualification of national staff as such staff was inexistent at the time of the Mission.

3.2.4 According to the Mission, the risk analysis in the project document should have also comprised:

a) reliability of the project logical framework and strategies;

b) availability of good, effective national counterparts;

c) setting up a reliable coordination mechanism and making it fully operational;

d) the stability of the internal economic climate, including the probability of introducing of a structural adjustment mechanism for the national economy.

3.2.5 It is worth pointing out that, despite the present unfavorable economic climate and the enormous difficulties experienced by the project, the relations between EEI and all its original partners seem to have remained unchanged, which justifies the Mission favoring preservation of the original institutional arrangements, including the project execution by UNIDO.

3.3 Project Strategy and Analysis of Alternatives

3.3.1 The strategy to achieve the project objectives is rigorous and incorporated in the original project design. With a few modifications, that strategy represents, in the view of the Mission, the optimization of ways to attain the objectives, while the means available for that attainment seem to have received less attention. The Mission was unable to determine whether an independent analysis of implementation alternatives and strategies was performed at the project formulation stage. However, considering the long genesis of the project preparation

(almost 20 years), the objectives to serve, and its place in the national educational system, the Mission, based on its own experience in project development and implementation, can ascertain that the project strategy, as originally formulated, represents a successful attempt of maximization of quality and of time factors. Unfortunately, as already explained, several key components of the project's structure have been modified and, with them, implicitly, the strategy. As a result, the alternative strategy selected does not ensure the same outputs in qualitative and quantitative terms and, what is worse, the medium and the long-term sustainability of the project is severely jeopardized. The reference is especially made to the EEI as a center of academic excellence, to its ambition to become a well reputed regional school. The above-mentioned changes have not been made based on a comparative study of alternatives, not even in a true tripartite context, but apparently in an ad-hoc manner, based on a top-down approach, detrimental to the project.

3.3.2 As far as the division of project operations in a number of phases is concerned, starting with the preparatory phase, passing into the development one, and ending with the consolidation phase, the Mission considers this strategy as conceptually sound and commendable. The benefits of this strategy are obvious at present, when the project crosses difficult times and when the partners should get together and decide on its future. For the sake of argument only, had it been just one phase project from the beginning to the end, one can assume that, based on the recent experience, instead of US$500,000 in equipment shelved in classrooms and laboratories, the EEI could have been endowed by now with a much larger quantity of equipment in similar state. It is somehow surprising that the project management did not look carefully enough into the project document and follow the strategy underlined under point B.4, which clearly states that the fulfillment of the project objective is expected to be achieved by:

a) training technical and administrative staff, making use of high-level expertise;

b) supply of necessary equipment for training;

c) development of course curricula;

d) training instruction staff;

e) establishment of the second year specialty programs and corresponding laboratories;

f) carrying out the training of the trainees for the completion of the two-year program in the second phase.

3.3.3 The Mission has to point out its fruitless efforts to find out whether a needs assessment was ever performed to establish reliably the capacity of the EEI. The necessity for such an assessment appeared in relation to frequent decisions regarding increasing and decreasing in the number of trainees and in that of the permanent faculty staff. However, hoping that firmer and more realistic targets will be set for the project in the future, as far as the Mission is concerned, there is no other more logical alternative for the country's development strategy than maintaining this project among the priorities of the Government. It is the Mission firm opinion that, from priority point of view, this project should be able to stay strong and be defendable in front of any other, except perhaps of those related to national emergencies.

3.4 Project Beneficiaries

3.4.1 The project beneficiaries are identified correctly in the project document. As with any other educational entity, the direct beneficiaries will be all those who pass the threshold of the school, either for studying or for teaching, or for administering. The end-users are the prospective employers of the technicians trained by the EEI, practically a wide range of public and private entities. But no one could prevent that a high-level technician trained by the project become self-employed, and thus the end-user of his/her own skill.

3.4.2 And again, as with any other educational entity, the higher the exit position of the individual is in terms of the skills he or she accumulates, the larger the number of the end-users is and the more complex and more demanding are the requirements he or she should be able to overcome.

3.5 Logical Framework, Objectives and Outputs

3.5.1 The framework for the project objectives, outputs and activities was appropriate in principle at all levels at the project approval stage. However, even at that stage, for reasons unknown to the Mission, the project document did not contain, as one would have expected, a number of usual aids such as: success criteria, achievement criteria, quantitative and qualitative indicators, responsibility for inputs and outputs and related timeliness for their availability.

Where no such indicators were given, the Mission applied its expert judgement as to what the general intention of those who had drafted and approved the original document, might have been. It is in this manner that the evaluation of the project implementation was made possible. However, the Mission had very limited contacts with individuals directly linked to the project implementation and its problems and, therefore, there is a certain degree of relativity in its assessment.

3.5.2 Also, in attempting to assess the progress made regarding activities, outputs, and immediate objectives, the Mission referred to the draft project document prepared by the UNIDO-UNDP Mission in July, 1990. To the extent possible, the Mission also corroborated its impressions with the director of EEI. However, in recognition of the work done in each case, but not wishing to underestimate the work required to complete the items, the Mission might have emphasized the negative aspect related either to the work performed, or the standstill situation of the project in order to impress the audience of this report towards undertaking measures of remedy.

3.5.3 The Mission believes that, by not executing activities related to the recruitment and training trainers, the enrollment and the training of trainees and sufficient administrative staff, i.e., by not making the EEI fully operational, all the other project outputs are rendered unusable, irrespective of their quality and the date of delivery. This truth remains valid, although, in appearance, one may believe that non-executed activities are relatively unimportant in volume, costs, and duration. In the opinion of the Mission, this is not entirely true: the recruitment of staff of all categories could become a time-consuming operation in view of the number and the quality required for each category. Realistically, the actual duration of the first phase should normally depend, to a great extent, on the recruitment and training operation. A much clearer image of the succession of activities to produce the intended output would have been obtained if a detailed and professional workplan had been prepared by the project and approved by the coordination authority. Although there is proof that a couple of attempts to prepare the plan were made, the lack of experience and, presumably, the lack of advice from his agency or the UNDP prevented those attempts from succeeding.

3.6 Project Monitoring

3.6.1 The Mission, based on its findings, feels compelled to express its concern that there is no program officer in charge of managing this project in the office of the UNDP

Resident Representative in Addis Ababa. The explanation for this rests with the presence of the UNIDO Country Director's Office, which performs most of the current backstopping and monitoring functions on behalf of both UNIDO and UNDP. The Mission, without minimizing the genuine interest and the efforts of that Office in all matters concerning this project, considers this arrangement questionable and believes that it should be reviewed and, possibly, rectified to be brought in line with standard UNDP-Executing Agency's arrangements for monitoring the implementation of UNDP-financed projects.

3.6.2 The project document comprises precise and detailed provisions concerning the monitoring system:

a) Tripartite review, at least once every twelve months, the first meeting to be held within twelve of the start of full implementation (from the date of CTA's arrival);

b) The Chief Technical Advisor will submit progress evaluation reports before the tripartite review;

c) The project would be subject to an evaluation after the implementation of the preparatory phase;

d) A preliminary workplan will be incorporated as annex in the project document.

3.6.3 Against these provisions, the CTA has fulfilled his obligation with respect to the submission of the PPER, in October 1992, and a Final Report before his departure in June 1993. Regrettably, no feedback to any of these reports has been provided by any of the three partners. It is worth mentioning that the reports submitted by the CTA are technically well prepared, informative and to the point. Often in his reports one can find good anticipation of decisions taken by the project management at a latter date. In retrospect, the Mission is pleased to note that, according to the impressions gathered during its short stay in Addis Ababa, the CTA entertained reasonably good working contacts with his counterpart, the National Project Coordinator, with the Ethiopian authorities in general sense, with the UNDP Resident Representative, and with the UNIDO Country Director, as well as with such important officials as World Bank and the Africa Development Bank representatives. The Mission believes that these relationships helped the project assist authorities to mobilize significant support from the African Development Fund in favor of this project (US$5.4 million). The CTA must be commended for the quality of his technical inputs.

3.6.4 The National Project Coordinator, EEI Director, Ato Aeyle Lkew, has been an effective counterpart for the CTA from the beginning of the UNDP/UNIDO involvement. Additionally, he greatly assisted the Mission during its work in Addis Ababa as virtually the only source of direct information regarding the EEI and the UNDP project. As already mentioned, three administrative staff employed by the EEI were trained and are presently working at the EEI Headquarters.

3.6.5 As a corollary, it is believed that a significant amount of groundwork has been laid for continuation of the EEI and for successful conclusion of this project. It can be said candidly that the Preparatory Phase of ETH/88/011 was essential to put realistic, solid foundations to the EEI, to adopt a reliable strategy for its development in harmony with the realities of the country and of those of the international environment. With better coordination in general, with better monitoring and more interest in the project' daily life by all parties, much more could have been achieved.

3.6.6 The project was administered by national and UNIDO personnel in a routine manner. Not much was accomplished in terms of the establishment of the EEI, among which the non-attainment of two major project outputs. Much more was gained in terms of future, strategic planning for the Institute. If sufficient time and resources are allowed, the attainment of all outputs could be fully realized within the UNDP/ADF budgets. If project operations start soon monies spent on equipment, on training materials or on institutional development will be put to work and the potential loss will be minimized. The only unreasonable financial loss will occur if EEI start-up does not materialize.

3.6.7 The PPER has served the project on the occasion of the Tripartite Review Meeting of October, 1992. It was at that meeting that a number of questionable decisions were taken by the three partners. These decisions have already been addressed in this Evaluation Report on several occasions and they will continue to be addressed in view of the importance of keeping the project concept and operations as much as possible in line with the original design.

3.6.8 Considering the importance of this project and the fact that the preparatory phase was not successfully implemented, and it lasted much longer than originally envisaged, the Mission feels that a good opportunity has been missed to hold a second Tripartite Review Meeting before the departure of the CTA. This would have alerted the partners at the higher level once more of the situation governing the project. Such a Meeting could and should be held once this report is made available to the concerned parties. The presence of the CTA at the

project site, as an input source to this Mission Report, would have also been invaluable.

3.6.9 The Mission would have expected much more interest from all partners regarding this project. There were no joint or other type of working visits at the EEI compound to show concern about its state and to find solutions. The substantive (technical) backstopping at the field level by the Executing Agency Headquarters has been non existent. In fact it is the technical backstopping by the Agency which should have alerted the parties about the inappropriateness of changes effected by the TRM and offered acceptable alternatives, better adapted to the local environment. This might have even prevented the project to spend scarce resources before entering into a major crisis.

IV. PROJECT IMPLEMENTATION

4.1 Initial Workplan Vis-a-Vis Actual Activities Undertaken

4.1.1 The preliminary workplan attached as Annex I to the project document was of little use, and failed as a project management tool or aid. The main reasons for this have already been explained. In addition, it can be stated that:

a) The page orientation is portrait, whereas a more suitable orientation for duration of the project of twelve months barchart would have been landscape;

b) In lying out the list of activities on the chart, no allowance was made for the use of both planned and actual barlines. These are fundamental to effective monitoring of the progress of the project implementation.

4.1.2 There is a parallel issue here regarding point b) above, which has not been addressed and has significance in determining the reason for the slow rate of progress on this project. This is the exercise of quantifying, in absolute and relative terms, the work in each activity and the resources required. As the original barchart was practically useless as a management aid, it cannot be ascertained if the quantification of activities, for monitoring purposes, was ever envisaged.

4.1.3 It is noted that firm targets are identified in the originally-approved project document. Insofar as the project document suggested, a one-year and six months duration as being reasonable, there is no indication as to what was expected to have been achieved at any given point in time during that eighteen months period. Hence, it has not been possible to monitor and compare the progress of identified activities against an original program. The monitoring has been even more complicated by the decisions taken within the Tripartite Review Meeting, which took place at a moment when the project should have been implemented to a large extent and the international experts were gone. Some outputs and activities were canceled or suspended without being replaced by others. Some others were postponed because of the delay in Government funding of the operational activities of the Institute. In any case, no new project strategy emerged from that meeting and there is not strong enough substantive or technical justification for the following decisions:

a) Output two, "50 trained instructors in training methods" deleted integrally as a project goal, thereby eliminating the need for an Expert in instructor training (B/L 11-03), as reflected in the budget revision E of the project. In the new situation, the instructors to be utilized are expected to be permanent employees of the Addis Ababa University, instead of training instructors to become part of the permanent staff of EEI.

b) Additional equipment was requested and approved to fully equip three laboratory courses, one of which according to the PPER had been almost fully equipped. The additional amount of financing obtained from the UNDP amounts to US$ 243,000. This financing was envisaged originally to be provided under the Phase II.

4.1.4 From all the decisions taken by the Tripartite Meeting, the Evaluation Mission feels compelled to challenge particularly the above two. In the opinion of the Mission, there could be no educational institution willing to be recognized nationally and internationally as a school of excellence where teaching is entirely performed on a part-time basis. Looking into this matter, the Evaluation Mission feels strongly that the minimum permanent academic staff required by EEI should not be less than 70 percent of the total requirements. Whether this staff obtains its degree in the country or abroad is important but not essential. Rather, what is essential for them is to have as basic requirement an engineering background at the time of joining EEI, and commit themselves to reach a master degree in pedagogy locally, within 3-5 years thereafter. Establishing a direct professional contact with strong educational institution(s)

abroad of the same educational profile represents a necessary condition for superior performance and an incentive for fast development of individual abilities. In the future, these contacts will be based on project fellowships of six months each, preferably usable in two sessions of three months. During the fellowships, attention will be focused on the most advanced teaching methods, curricula, programs, etc., all of which could be easily transferred, adapted, adopted for the benefit of EEI.

4.1.5 As far as the equipment is concerned, the Mission notes that, although the approval for additional funding was obtained in October 1992, the payment for that equipment was effected only in June 1993. It was clear at that time that the project was facing a major problem of financial support from the Government and, therefore, a sound project management should have kept in abeyance the purchase of additional equipment, particularly in view of the fact that most of the new equipment was meant for the second year of studies at the Institute. As things stand now, half a million in electric and electronic equipment is shelved at the Institute for an undetermined duration.

4.2 Agreement on the Main Issues Facing the Project

4.2.1 It is the impression of the Mission that the consensus of the partners in the TPR Meeting with regard to several points discussed was not without reservation. Reference is made to the intended Technology Transfer Center and the Innovation and Development Center considered by the UNDP Representative as duplications if included in the EEI. The Mission finds that, in principle, the UNDP position was correct and is of the opinion that the focus of the project should have remained on its immediate objective: the establishment of the EEI as a strong, well reputed educational institution. This requires firm support from all parties, dedication from its staff and hard work. The Evaluation Mission also agree with the reservations expressed by the UNDP representative at the TRM concerning the lack of realism in approaching twinning arrangements (both north-south and south-south) and the exaggerated role which these arrangements could play in the life of the project. It is difficult to understand why disagreements could exist when the logic of the UNDP arguments was so obvious. Moreover, in the context of canceling the permanent instruction staff of the Institute, developing and placing the twinning in the forefront of the project strategy was and remains a logic difficult to understand and defend even today.

4.2.2 As far as the regionalization of EEI and its role in strengthening the South-South cooperation, the Mission considers that these aspects are brought into discussion much too early in the project's life, even though they were introduced among the outputs of the first phase. In order for this cooperation to become effective, there must be at least one of the following two preconditions fulfilled: (1) EEI must exist with all attributes of an educational entity in its field of competence; and (2) EEI must be internationally recognized as a school of excellence. EEI is not there as yet. Consequently, there is no need for the EEI staff to travel Africa or, for that matter, any other continent. The road to Addis Ababa is well known in the region as it had been opened by the Civil Aviation Training Center and by the Telecommunications Training Center, and perhaps by other Ethiopian schools of regional importance and reputation. What is important for the EEI to understand is that:

1. Several years of hard work are needed before the basic conditions mentioned above are fully met;

2. There are important national capacities which could and should be actively and intelligently used for a rapid progress of the EEI towards sustainability. They are the two schools mentioned above, plus the Addis Ababa University. All these schools are able to contribute with experienced staff, including instructors, textbooks, equipment and, perhaps equally important, the training packages method, based on identified training modules of frequent use.

4.2.3 The job analysis method is currently used in the preparation of training packages and is well mastered by the CATC/Addis Ababa. The Center is fully equipped to produce such packages for its own use and for sharing them with other training centers abroad. The course developers at the CATC are well trained and able to assist producing such packages in any area of training. UNDP encourages utilization and generalization of this training methodology, known under the name of "TRAIN-X", in which has invested time and money. The methodology is also successfully used by several UN specialized institutions and is being adopted and adapted by well reputed schools and universities on all continents. The Mission believe that areas of training based on TRAIN-X concept can be identified and that the project should be able to assist financially in the development of training packages. It would be a great pity and an unforgivable error to have such an invaluable partner next door and not take advantage of it. This effort must be facilitated by provisions in the project document for the second phase which already mentions modular training among other modern methods.

4.2.4 The direct, organic relationship of the EEI with the AAU has been established by the decision of the TPRM of 10 November 1992, as an alternative to the total elimination of the recruitment and training of the EEI instructors envisaged within the original project design. There are strong reasons that this relationship become the most natural, effective and mutually beneficial in all circumstances. University should, as a matter of principle, assist with its capacities in the establishment of the EEI. It is reasonable to assume that during the first three-four years, the teaching staff at the EEI will consist of selected University, EELPA and ETA staff, present at a rate of 100% at the beginning of first academic year courses, and diminishing gradually to 30%, the difference being taken over by the EEI permanent instruction staff. But if it is to apply a more realistic strategy for training EEI permanent staff, AAU will have to: (a) assist in the preparation and implementation of instructors' M.Ed. programs; (b) lend its own teaching staff for launching training activities at EEI; (c) reviewing curricula and programs of EEI; and, (d) use its vast experience in all educational and administrative matters faced by the Institute. Main areas of cooperation between EEI and AAU should be carefully identified and memoranda of understanding accompanied by a workplan prepared and formalized. The project should compensate the University financially for its efforts, whenever there are no other feasible forms of compensation. This relationship should be seen as the most reliable and effective form of "twinning" the EEI can ever get.

4.2.5 It should be pointed out that, as a matter of principle, the experience with north-south twinning arrangements is not very encouraging. All educational institutions in the world, be they in developed or in developing countries, with very few exceptions, are running on tight budgets. This situation is not new, and it represents the basic reason that none of the twinnings based exclusively on good will and Memoranda Of Understanding (MOU) survive. There are few twinning arrangements of a long date but they are invariably based on outside financing. The present special links established by EEI with various technical schools in developed countries will last as long as the project fellowships are under implementation at the respective schools. This means about 4-5 years, which is important for the development and the consolidation of the EEI. Efforts should be made to ensure availability of a number of fellowships thereafter and thus develop longer term and selective professional relationship. Demand for such fellowships is unavoidable, irrespective of the origins of their source of financing. Hopefully, when the time comes, part of the EEI income from training foreign students should be used for such fellowships.

4.3 Progress and Achievement of Activities to Date.

4.3.1 The Mission benefitted in working on this task of the project files and reporting and of numerous meetings with the National Project Director, the UNIDO country Director, visited the EEI Headquarters on several occasions, examined workplans and budgets and wishes to offer its opinion below. As already explained, it is to be noted that there is no quantified barchart or workplan against which planned vs. actual progress can be monitored.

IMMEDIATE OBJECTIVE: TO ASSIST IN THE INITIAL ESTABLISHMENT OF AN ELECTRICAL AND ELECTRONIC INSTITUTE, INCLUDING THE DEVELOPMENT OF CURRICULA, TRAINING OF INSTRUCTORS AND ADMINISTRATIVE STAFF, INSTRUCTION AND IDENTIFICATION OF TWO OVERSEAS INSTITUTIONS FOR A "TWINNING ARRANGEMENT" FOR LONG TERM SUSTAINED TRAINING OPPORTUNITIES (IN PHASE I) TOWARDS THE EVENTUAL COMPLETION OF THE ESTABLISHMENT OF AN ELECTRICAL AND ELECTRONICS INSTITUTE EXPECTED TO PROVIDE TRAINING AND TO MEET THE EXPANDING DEMAND FOR QUALIFIED SKILLED INSTRUCTORS AND MIDDLE/HIGH LEVEL TECHNICIANS IN BOTH PUBLIC UTILITY ORGANIZATIONS, AND WITHIN INDUSTRIAL ESTABLISHMENTS.

OUTPUT (1.1) Curricula development consisting of High Technology Core and Advanced Specialty Training which directly fulfills the training requirements of the industries concerned.

ACTIVITY (1.1.1) Recruit and appoint two international advisers (Electrical and Electronics areas)

COMMENTS: The Expert in Electrical Power/Curriculum Development, the CTA, was employed for a duration of 21 months (28/9/91 through 27/6/93). The Expert completed successfully the requirements in the job description. He also completed the High Tech Core Curriculum for the first year of instruction, Curricula for the Electrical Power Technology Specialty and supporting equipment has been identified. The equipment lends itself to a competency based program of instruction, thereby allowing the use of standard lab text manuals. In terms of quality, all curricula are state-of-the-art and reflect widely-accepted training components. Completion rate: near 100%.

ACTIVITY (1.1.2) Development of curricula

SUB-ACTIVITY (1.1.2.1) Gather curriculum materials currently in use in training centers as well as relevant materials from participating industries.

COMMENTS: Curriculum gathered and utilized as basis for advanced specialty courses. Quality: good coordination. Completion rate: 100%

SUB-ACTIVITY (1.1.2.2) With the EEI director and the participating institutes' managers assess materials, finalize one standard program outline for each course.

SUB-ACTIVITY (1.1.2.3) Following the establishment of specialty advisory committee, each representing their respective industries, convene the committee for consultation and integrating of curricula according to current Ethiopian and International Standards.

COMMENTS: Committee assignments made. Personnel identified are appropriate heads of departments. Charge to Advisory Committee is acceptable and appropriate for technical colleges. Specific reference is made to Program Advisory Committee. Handbook Section 4.10/13 and 4.10/15. Quality: excellent. Completion rates:

Handbook	100%
Committee assignment	100%
Committees activated	0%
Overall completion	65%

SUB-ACTIVITY (1.1.2.4) With the assistance of the EEI director, managers of the participating public utilities, and designated instructors, in consultation with industry representatives, prepare the various syllabi, noting:

a) units of instruction; b) learning outcomes; c) related tasks; d) performance standards; e) tools, equipment and resources; performance steps and enabling objectives; and g) fellowship training program.

COMMENTS: Units of instruction, Learning Outcomes, Related tasks, Tools, equipment, and resources, Performance steps and enabling objectives are provided as an integral part of the training program materials (curricula) from the training equipment suppliers, such as Labvolt, Heath, and Hampden. Others are called out in specific syllabi, i.e., English and Mathematics. As far as the performance standards are concerned, these are to be constantly reviewed and revised as appropriate by primary course instructors and the Program Advisory Committee, Administration, and Governing Board. Referring to the fellowship training programme, guidelines were established. No specific programs were identified, as these are to be best suited to needs of individual fellows. Quality: very good; Completion rate: 90%.

OUTPUT (1.2) Fifty trained or upgraded instructors for the EEI in the field of training methodology (pedagogic) use of audio-visual equipment, preparation and reproduction of training material.

ACTIVITY (1.2.1) Recruit and appoint international adviser and national counterpart.

ACTIVITY (1.2.2) Assess existing policies, curriculum and training methods for instructors and training officers' programs within the EEI and analyze all data including job and skill analyses carried out in the electrical and electronics industry. Prepare job descriptions for the various instructors.

ACTIVITY (1.2.3) Prepare instructors' guides and handouts for the trainees together with national counterpart staff.

ACTIVITY (1.2.4) Develop training programs in light of the survey results undertaken, including subjects such as training methodology, development of instructional material, use of audio-visual and reproduction equipment. Upon conclusion of the assignment, recommend future programming.

ACTIVITY (1.2.5) Conduct instructor training programs.

ACTIVITY (1.2.6) Install a permanent evaluation system.

ACTIVITY (1.2.7) Prepare an inventory of facilities and equipment available within EEI. Familiarize with installed equipment and related course materials.

ACTIVITY (1.2.8) Set up a library with required text and reference books.

COMMENTS: Except for Sub-Activity 3, within which Faculty Handbook was developed, Sub-Activity 7, within which Inventory Lists were completed, and Sub-Activity 8, within which text and Reference Books were collected (but without establishing the Library due unfinished infrastructures), none of the other five Sub-Activities were completed. As already pointed out, this output was canceled by Tripartite Review Meeting of 10 November 1992. It should now be reinstated and included in Phase II in an amended form, as suggested by this Report. There are opinions holding the view that most of this output could be substituted by benefits deriving from twinning arrangements, complimented by both in-country and out-of-country training. A brief glance on the above sub-activities (8), demonstrates lack of realism in this respect.

OUTPUT (1.3) Equipment required for the institute identified and finalized. Equipment for training of trainers and for first year program instructional and corresponding laboratories, procured, installed, and operational; equipment needs for the Institute, including the second year specialty program laboratories identified and additional needs indicated (please see Appendix E for proposed equipment).

ACTIVITY (1.3.1) Identify and finalize the equipment required for the institute.

COMMENTS: Institutional equipment identified. Quality: excellent; Quantity: 100%.

ACTIVITY (1.3.2) Select appropriate equipment that meets prior identification criteria, for training of trainers and for first year program instruction and laboratories and requisition procurement.

COMMENTS: Equipment for High Tech Cores identified. Quality: excellent; Quantity: 100%.

ACTIVITY (1.3.3) Procurement of equipment.

COMMENTS: All identified equipment (instructional and institutional) purchased. Quality: excellent; Quantity: 100% completed.

ACTIVITY (1.3.4) Receive and install equipment.

COMMENTS: All equipment received and inventory taken, with only one item in transit at the time of visit. Quality: Unknown; Quantity: 100%. Laboratory benches installed. Electrical power required to HTC lab benches. The Evaluation Team noted that electrical power needs are going to be supplied to student workbenches in the HTC laboratory and that EELPA has agreed to complete the installation prior to the start-up. In all, a total of eight laboratories and eight classrooms and ten instructor offices are prepared.

ACTIVITY (1.3.5) Testing of the equipment.

COMMENTS: Equipment untested. Quality: unknown; Quantity: 50% completed. A total of US$365,908 has been expended on trainers and institutional support equipment (or about $.5 mil. if transportation costs are added). Included in these purchases was the equipment of the High Tech Core Program. All the equipment has been received and inventoried except four laboratory tables which are in transit. A complete seven-page listing of equipment by item is included in the Appendix VIII. The Evaluation Mission finds the procurement procedures to be consistent for competitive bidding practice. The Evaluation Mission adheres to the views of the CTA who considers the total cost of equipment conservative, in view of the quality and quantity. It should be noted that part of the equipment for the second-year specialty programs is also included in the existing inventory. Additional financing requested for equipment purchase was justified by project through invoking price increase, larger number of students to be enrolled than planned, underfunding of the Phase I by UNDP, etc. None of these reasons were entirely accurate. Finally, this output is only partly delivered as the equipment is neither installed nor tested. It is usually on the occasion of testing that problems appear. If testing is placed after the expiration of the warranty period, the supplier is exonerated of responsibilities. This should have been one more reason not to be in a hurry and purchase equipment, before certitude existed on its full and immediate utilization. At the time of the visit, a general estimation on Output 3 is as follow: Quality: unknown; Quantity: 150%. Overall implementation rate for output three: 80%.

OUTPUT (1.4) Three administrative staff trained.

ACTIVITY (1.4.1) Carry out on-the-job training of administrative staff. This will be carried out by the three international experts.

COMMENTS: On-going training of administrative staff, 5 workshops developed. Quality: Staff demonstrated orientation and commitment to quality. Quantity: 80% This output deviated from its original concept in that the CTA/Expert developed a series of five workshops and conducted in-house training of three administrative staff and the Director of the Institute. It can be argued that by doing so, savings resulting from this in-house training could be, in part, justification for the extension of the CTA's assignment. However, this argument is debatable: the experience and knowledge of one professional (CTA), can not be equated with the experience of the three experts originally envisaged to perform administrative training. The four administrative staff personnel are identified in pages 11-12 of the CTA's final report.

OUTPUT (1.5) First batch of trainees admitted and instruction including related laboratory work carried out for the first year of the Electrical Power and Telecommunications program.

ACTIVITY (1.5.1) Admit first year trainees.

ACTIVITY (1.5.2) Carry out instruction, including laboratory work, for the first year of the electrical power and telecommunications program.

ACTIVITY (1.5.3) Assess/evaluate impact/results periodically.

COMMENTS: First year admission of students delayed due to lack of operational budget. Quality: N/A; Quantity: 0. As already mentioned in this part of the Report, all the preparations for a successful start-up of the Institute have been made by project management. These include agreements relative to instruction of trainees by AAU faculty, a faculty handbook developed, laboratory space and classrooms made operational, a complete policy and procedures handbook developed and Advisory Committee appointments identified for the ETT and EPT programs. The Evaluation Mission noted the excellent quality of the policies, procedures prepared by the project and regrets that these outputs can not serve the purpose of EEI. While eight classrooms

and ten instructor offices have already been prepared, within the next phase, with the UNDP assistance and ADF loan monies, it is important that the library and auditorium buildings will be given priority. The Evaluation Mission wishes to express the extreme urgency for completing and equipping the library. This should be one of the priorities of the Phase II.
Quantity: 0%.

OUTPUT (1.6) Two overseas institutions identified for a "twinning arrangement" for long-term sustained training opportunities; and a workplan prepared to implement the arrangement in Phase II and beyond the project. Fellowship training carried out.

ACTIVITY (1.6.1) Identify two institutions (one in a developed and the other in a developing country) during the study tour for a "twinning arrangement."

COMMENTS: The two institutions in a developed country identified: (a) University of Wisconsin - Stout, and (b) Ferris State University. Quality: no evaluation criteria stated; Quantity: 100% complete.

ACTIVITY (1.6.2) Prepare a workplan to implement the arrangement during Phase II and indicate a plan for the future, that is, after the completion of the project.

COMMENTS: Workplan for twinning prepared. No fellowships have been accomplished as no instructors have been appointed. Three administrative staff have been trained in-country but not enrolled in M.Ed. program. Quality: no evaluation criteria established; Quantity: 25%.

ACTIVITY (1.6.3) Carry out training under fellowship in areas of vocational training/management, curriculum development, training of trainers, trade testing and certification, implant training, etc..

COMMENTS: In December 1992, a study tour was conducted in the United States. As a result, preliminary arrangements were made with the University of Wisconsin -- Stout and Ferris State University for in-country and out-country training towards Master's Degree programs for the EEI faculty. However, as no operational budget has been made available, fellowship training has not been carried out as no full-time faculty have been employed. Consequently, approximately US$110,000 out of an initial allocation of $156,000 is left unspent in Phase I.

Although this activity is essential for ABET accreditation and long-term sustainability of the EEI, it should be pursued based on a more realistic programme and at an appropriate date, only after EEI faculty are permanently employed and can participate profitably. When appropriate time comes, efforts should be made to identify well reputed technical schools in developing countries for establishing strong, mutually profitable relationship. However, as already mentioned in this Report, the benefits of partnerships with twinning universities in developed countries should neither be overlooked nor overemphasized. It should be pointed out that even less reason for such a tour existed after the cancellation of the output two, when it became clear that, for preventing the brain-drain phenomenon, and for reasons of their own, the authorities decided to make use of AAU faculty staff as part-timers of the EEI. This decision means that there will practically be no degrees taken abroad and, consequently, a more limited fellowship training may take place. This decision was known before the twinning tour started and should have resulted in a reassessment of the project which should have normally led to the cancellation of the tour. However, all considered, the Mission believes that this first contact with well established universities abroad could be useful for EEI, in order to better estimate the considerable complexity in requirements faced by EEI, the resources and energy expected to be made available before the immediate objective of the project is attained. Based on this first hand experience, the EEI team should be able to upgrade and update its strategy towards that objective.

4.3.3 Unforeseen Outputs: two additional outputs were implemented in addition to those identified in the Phase I document. They are as follows:

A) Project proposal to African Development Fund for additional funding developed and successfully executed. The following two ADF visitations, an ADF loan was approved in the sum of US$5,415,946. These funds became available on 22/01/93.

B) Five-year strategy plan was developed by the Government with the assistance of the project and presented to the Science and Technology Commission for inclusion of EEI in the 5th Country Cycle Plan. The funding of US$6,954,000 is included in the Plan, as presently approved.

4.3.4 Submission of on time of a number of documents as required by the Phase I as follows: 1) PPER; 2) UNDP/UNIDO Phase II Project Document; 3) Terms of Reference for the Evaluation Team; and 4) UNDP/UNIDO Phase I final report. These documents were

prepared by the CTA in cooperation with the NPC and forwarded to the appropriate agencies concerned.

4.4 Emergence of New Strategies

4.4.1 The establishment of the EEI and the strategies employed were in principle in line with Government policies for post-secondary education and accreditation. Additionally, the EEI has enjoyed support of the Government planning agencies as a part of economic development, in particular, the micro-electronic subsector. The following strategies emerged under project implementation:

a) The CTA also served as Expert in Electrical Power Technology Curriculum Development, as well as mentor and trainer for the administrative staff. This could have resulted in substantial project cost savings had the start-up of the Institute been as scheduled, for January 1993. It should be noted that he did the work in isolation, without qualified counterpart in electrical power technology.

b) Additional sources of external funding were long recognized as necessary for overall establishment and sustainability of the EEI. The CTA, at the request of the Government of Ethiopia, sought and obtained a loan for approximately US$5.4 million, which will allow the addition of many new specialty programs. This is an important factor in the development of the industrial sector, as the EEI will also have the flexibility in programming to meet the training needs of the private sector. This major development alone should have resulted in convening a TRM to assess the project implementation and establish future strategies.

c) The curriculum for the HTC, first-year programming, provides a broad base on which to build many of the various specialty programs. This building-block concept will provide flexibility for the EEI in future curriculum adjustment.

4.5 Quality of Expertise and Training

4.5.1 UNIDO Expertise included curriculum development experts in Electronic Telecommunications Technology and Electrical Power Technology. The Chief Technical Advisor provided expertise in curriculum development and electrical power technology, in college administration and policy development, in equipment identification. The Expert in electronics did the same in his field of competence, less training in college administration. It is believed that the curriculum developed, equipment identified and procured, and policies developed are acceptable to the Government and in line with the country development plan. Although there has been significant transfer of expertise from expatriate CTA to the national staff, it is not known how effective this training has been, until the actual start-up of the Institute will show its strengths and weaknesses. This aspect will need to be evaluated at the completion of Phase II, rather than at this point. However, one thing is sure: no national counterparts other than the NPC and the administrative staff were assigned to work with the expatriates to be trained on-the-job.

4.5.2 Most of the formal training, in particular the training of instructional staff, was deleted from Phase I. This training should take place during the phase two, mostly in the country and less based on fellowship training abroad; therefore, the success of this training is impossible to asses at this point.

4.6 Appropriateness of Equipment

4.6.1 As mentioned briefly in the Mission comments on output 1.3, all the equipment procured with Phase I UNDP monies was thoroughly evaluated prior to purchase. Additionally, the UNIDO bidding process was applied. With regard to the appropriateness of equipment, this matter has been discussed previously.. The equipment is internationally recognized as high-caliber training equipment, and, in fact, is very appropriate for the level of technical training to be delivered at the EEI. Many spare parts and supplies were ordered at the time the equipment was purchased. This is perceived to be a prudent expenditure. The Evaluation Mission recommends that the EEI staff continue to maintain a suitable inventory of expendable supplies so that instruction is not unduly interrupted. Additionally, a project vehicle was obtained locally. Its usefulness will extend through the Phase II and beyond. The Mission reminds Government and UNIDO that equipment installation and testing must be performed within the warranty period in order to enjoy all benefits incase hidden or other defects appear.

4.7 Institutional or Staff Changes During Implementation

4.7.1 At present, all that the project has in terms of staff is National Project Director, and three administrative officers. At its peak, in 1992, the project had, in addition to this staff, two international advisors: the CTA, himself adviser in electrical engineering, and a short-term Consultant in electronics. The project has never hired any counterpart instruction staff and has never recruited trainees. No institutional changes occurred in the project during the implementation period (21 months, starting October 1991). There is no on-going activity of any kind at present and there are no visible elements of change in the present statu-quo. While the external support does not seem to be a problem, the real stumbling block is on the Government side. Statements regarding high priority and genuine need are usually accompanied in UNDP projects by actual support in providing projects with operational budgets. In this special case, however, the Mission is concerned that, in view of the state of the Ethiopian economy, the Government may hardly find means to fulfill its obligations. This is a matter of affordability and a matter of political will or priority within resources available.

4.8 Linkage of Project Activities to Main-Stream Activities

4.8.1 In theory, the thrust of this project should have complimented, either at technician level, or at the university level, a number of training programs presently going on in the country. Obviously, the project is not there as yet. However, it should be known that there is no duplication between EEI and the other educational institutions. Actually, the EEI is filling a gap which otherwise would widen continuously, and become costly to bear or impossible to eliminate at a later date. In addition, by its intervention in electronics, in a number of years the EEI will contribute to placing the country among those nations able to compete for a better place in technological progress of tomorrow world. The most valuable links expected from an educational institution are those with the users of its services: the labor market. The degree of fulfilling the requirements of that market will be a clear test of its validity.

4.8.2 At the launching stage, the EEI needs and should obtain assistance from all institutions which have professional capabilities to perform teaching in one or more EEI curricula. After its consolidation, the EEI can become a strong, well reputed school, as it will excel in technical training, while continuing to cooperate with national technical schools of similar profile and with selected schools abroad.

4.9 Quality of Administrative and Financial Management

4.9.1 Overall, from this point of view, the Mission has noted that the project was run in an acceptable manner, with the project office in Addis Ababa at the EEI headquarters. At the time of the visit, the Mission found that the UNDP project budget had been reconciled by the executing agency in May, 1993. The Mission is not aware of prior concerns regarding administrative and financial management of the project. One point should be, however, mentioned here: the Mission found evidence that major decisions regarding the project operations and related budgets were taken long before the partners met in the Technical Meeting of October 1991 and in the TRM, and that the meeting were used simply to formalize these decisions. Moreover, a number of valid points made by the UNDP representative at the Tripartite Review Meeting were disregarded. (Minutes of the two meetings are attached as Annexes X and XI).

4.9.2 The Mission considers that the CTA was a dynamic force for the project development and implementation. His activity is well documented.

4.9.3 However, the Mission has the impression that the project management was left to act too much in isolation and that no coordination and control mechanism was governing the project. Such a mechanism would have been useful and would have prevented a number of questionable developments detrimental to project interests. The project was also, to a great extent, out of the UNDP control. There is no program desk in the UNDP Resident Representative's office in Addis Ababa which can be identified with the project. The explanation that there is an office of the executing agency next door is not sufficient: the fundamentals of the two organizations are not identical and in any case the tripartite system and its principles should be entirely preserved and fully exercised.

4.10 Funding and Other Financial Issues

4.10.1 As far as the Mission can ascertain, there have been no gaps in the flow of international funds to the project. On the contrary, the UNDP has shown once more its generosity, releasing an additional US$240,000 over the original budget. But it was the local funding which has become a problem since October 1992, and the situation is unchanged. Apparently, the UNDP is inclined to continue its support to the project under a second phase.

At the same time, the African Development Fund has also approved a loan of US$ 5.4 million for the EEI, out of which US$4.7 million in technical assistance. Despite this funding affluence, there is nothing that the project can do at present without the Government observing its obligations regarding the local operating cost.

4.10.2 UNIDO believes that the project was underfunded in Phase I, that the upward revision at the TRM was meant to do justice to the project and that " corrective action was taken during the Tripartite Review, in Fall 1992". As already pointed out, the Mission has a different opinion on this subject. However, the additional funds secured, amounting to US$243,000, allowed for the procurement of all essential High Tech Core, of some specialized training equipment and of a project vehicle. The same amount ought to be deducted from the equipment provisions for the second phase.

4.10.3 It is believed that too much emphasis was placed upon the operational budget through EELPA funds. This heavy reliance on EELPA operational monies manifested itself in a year's delay, minimum, for the start-up of the EEI. Future sources of funding should be more diverse. Unforeseen economic constraints upon EELPA, primarily due to recent floods and post-war reconstruction, have been major contributors to the non attainment of all project outputs. It is possible that an earlier coordinated intervention by Government and UNIDO regarding operating funds for the EEI might have the situation of the project.

4.11 Major Problems or Constraints During Implementation

4.11.1 The Mission has reviewed the background and circumstances related to the achievements of the project to date. It would appear that there is one single major problem, independent of the project, which can be said to have a major and adverse effect on the progress of the project. That problem has just been stated above. As with all development projects, there were operational problems, but the source of those problems often lay within the project in the wider sense. Such problems are those related to the cancellation of full-time instruction staff, the premature trip in search for twinning partners, down-playing the strengthening of EEI relationships with AAU and other Ethiopian training centers of international caliber. In the opinion of the Mission, they all will find relatively rapid, easy and correct solutions once the project resumes operations in full.

4.11.2 The Mission notes that the factors inhibiting the project are as follows:

a) Cancellation of permanent instruction staff;

b) Non availability of operational budget:

c) No formalized coordination mechanism available to assist the project in technical, financial, and other operational matters.

d) No workplan and cost plan of note: without proper and critical management tools such as these, the optimizing of resources and time cannot be undertaken, progress cannot be monitored, consequently project management and backstopping cannot determine what the cumulative effect of the delays could be, nor the most appropriate remedial actions to take and when to take them.

e) No critical interrogation of progress reports: as far as the Mission can ascertain, there has been no serious interrogation by all backstopping parties of the progress reports coming from the project team. This is regrettable from three points of view:

i) the direct benefit to the project team of receiving specific and constructive and substantive comments is lost;

ii) the requirement for the project team to discipline itself and give adequate attention to issues such as workplan rate of progress, rate of expenditure, quality of results, and so on, is lost.

iii) the psychological and productivity benefits gained from the project team knowing that someone is taking the considerable effort that goes into preparing progress reports seriously and is appreciative of this effort, are missing. The minimum that the Evaluation Mission had expected from the backstopping parties would have been to draw the attention of the project on the introduction of substantive changes in the project strategy without informing the UNDP properly and getting its prior approval. The Mission found

evidence that the decisions of the TRM, although substantive, were never incorporated in an amended project document approved by the three parties.

4.12 Appropriateness of Monitoring and Internal Evaluation

4.12.1 As has been discussed elsewhere in this report, there has been a significant gap in management controls, through the absence of qualified, resource-loaded workplans or barcharts with benchmark, milestones and indicators. This not only affects the ability of project management to plan, organize, and control the resources properly; it also means that all parties backstopping the project are prevented from interrogating any statements being made regarding the rate of progress.

4.12.2 The Mission recognizes that there has been good formal and informal communication between the project management and the office of the UNIDO Country Director through discussions, meetings, and other forms of dialogue. Apart from the fact that the UNDP was left aside at least on one important occasion (technical review meeting of October 1991), the periodical or occasional tripartite dialogue, in the opinion of the Mission, can usefully complement but can not substitute the discipline of sound and thorough documented planning, coupled with regular and rigorous monitoring and interrogation of progress assessments, in accordance with the principles of effective project management. In the opinion of the Mission, with one statutory partner (UNDP), aside of the dialogue and without adequate and properly utilized workplan, the principles of effective project management were not intrinsic part of this project life.

4.13 Appropriateness and Quality of External Evaluation

4.13.1 Prior to this Evaluation Mission (September 1993), no evaluation of substance had taken place. As this is a project assisting building an institution from scratch, and not an ordinary technical assistance project, the Mission wonders, admittedly with the benefit of insight, whether not having this evaluation earlier, while the CTA was still in the field, would not have been for the best. Moreover, six-months periodicity for the PPER would be appropriate until the project reaches a reasonable degree of stability and routine in operations.

4.14 Appropriateness and Quality of Tripartite Reviews

4.14.1 Only one Tripartite Review has been held in the life of this project (November 1992), one calendar year after the arrival of the CTA in the country. The Mission has analyzed entire documentation related to the project implementation, starting with the minutes of the Technical Review of October 1991 and ending with the final report by the CTA, and regrets to note that the TRM was simply used to formalize decisions and arrangements made prior the TPR meeting. From the position taken by the participants, as presented in the minutes of the review, it is obvious that TRM was not a comfortable meeting for any of the participants. In the opinion of the Mission, the decisions taken by the meeting (the limitation of the EEI instruction to part-time staff exclusively, the opportunity of accelerating "twinning arrangements," and the increase of the equipment component meant for the first and second educational years) were substantive, and consequently should have been sent, accompanied by the position of the participants, to the UNDP Headquarters for analysis and decision. Moreover, these decisions disabled considerably the project and practically paralysed it. Focus was diverted from key developmental outputs towards marginal ones: equipment purchase in itself does not represent a developmental activity, while utilizing equipment for training is; the costly study tour for twinning was untimely, of little use now and its impact will be reduced to zero by the time when the project development would require action related to north-south relationship.

V. PROJECT RESULTS

5.1 Outputs

5.1.1 First remark at this point is to draw attention to the fact that, by canceling the second and the fifth project outputs, the TRM made a major and substantive amendment to the developmental dispositive and to the logical framework of the project, without replacing them with equivalent values. Therefore, since there are no project elements to judge other than those retained by the original project design and since the Mission feels very strongly that design represents the most effective and efficient modality to reach the project objective, Mission judgement of project results is based on the original project design.

5.1.2 From the analysis of project implementation it results that, in composite terms, the overall progress towards total project delivery is 58%. In financial terms, the project

expenditure represents approximately 135% of the original budget. In relation to the time element, it should be observed that the initial duration of first phase of the project was 18 months while the end of it was declared after 21 months. This is translated in 16% delay in implementation. However, this delay has no negative implications on project operations as they are stopped in any case, for reasons beyond of the project control. But the delay may have some financial implications due to cost increase for expertise and training abroad, not mentioning the important investments in infrastructure totally unused. Moreover, the 16% delay in implementation is questionable as by "implementation" in this context means achieving only 58% of the agreed outputs.

5.1.3 As far as the individual outputs are concerned, the Mission has established the degree of relative/weighted importance for each. This, multiplied with the implementation rate of each output at the time of the visit results in a relative rate of implementation per input. Although the exercise
is empirical and debatable, it offers a relatively good indication on the state of the project implementation.

Outputs	Rel.import.	Implem. rate	weighted imp.	max.achievable
1	Important(2)	90%	180	200
2	Very imp.(4)	0%	-400	400
3	Less imp.(1)	80%	80	100
4	Less Imp (1)	80%	80	100
5	Important(2)	0%	-200	200
6	Not imp.(.5)	100%	50	50
TOTAL:		350	-210	1050

COMMENTS: If the degrees of relative importance of outputs vary from .5 to 4 are accepted, following remarks seem pertinent:

(a) The non execution of outputs two appears so damaging that the implementation achieved could have a negative effect on investment, because more than seven million dollars are not put at work.

(b) Non execution of output two means elimination of earlier intentions to build a strong permanent academic staffing for the EEI. If so, it will be practically impossible to build a sustainable, academically strong institution, based simply on part-time staff. This alternative is in line with the decisions taken by the TRM of 10 November 1992. Since financing of fellowships is not a problem and since local costs for part-time AAU staff do not differ much from the cost required by permanent staff, it seems that this decision can only be of policy nature.

(c) As far as the output (5) is concerned, its elimination will have the same end results as in alternative (a). It means that without students the school does not exist. This alternative corresponds to the impossibility to mobilize funds for operational costs of the Institute.

5.1.4 The above table was built in order to demonstrate in a more dramatic manner the effects of decisions taken, and particularly the effects of decisions expected to be taken in the near future. A more realistic rate of implementation of project outputs is 58.3 percent (or 350/600).

5.1.5 Concluding, the rates of implementation of the project are as follows:

OUTPUTS: 58 %

COSTS: 135 %

TIME: 116 %

NOTE: Assuming that the implementation resumes soon and the original project design prevail, the catastrophic rate of implementation of the project shown by these figures could improve dramatically in a very short time and with a reasonable amount of resources. There are only two conditions: TO PROVIDE FOR PERMANENT TEACHING STAFF AT THE ELECTRICAL AND ELECTRONIC INSTITUTE AND TO PROVIDE RESOURCES FOR THE OPERATING COSTS OF THE INSTITUTE.

VI. UNFORESEEN EFFECTS

As far as the Mission is aware, there has been no unintended effects with the exception of demoralizing state of the national staff, and discrediting of the entire enterprise in the eyes of those familiar with it, which is understandable.

VII. SUSTAINABILITY

7.1.1 To achieve sustainability, the project should:

a. Ensure firm budgetary support for the EEI local operational costs for a duration of minimum two years, and firm commitment for four more years.

b. Maintain excellent relations with EELPA and ETA and establish strong, viable relationships with AAU and national technical training institutions of regional reputation.

c. Make special efforts to reach academic excellence.

d. Diversify EEI relations with the public and the private sectors in Ethiopia and abroad, in order to get material and political support, including trainee candidates sponsored by these two sectors.

7.1.2 At present, there is no guarantee that the EEI will overcome the crisis is just crossing. In any case, assuming that this happens, a sustainability building up effort should be carried out on all plans. The Mission considers that the support of EELPA and therefore the EEI-EELPA special relationship should be preserved as a permanent feature. Similarly, the relationship with the Addis Ababa University should be made permanent and formalized, while the relationship with the various training centers of good standing in the country and abroad should be developed and strengthen based on mutual benefits. A systematic short, medium and long-term plan concerning the EEI relationship/sustainability variables should be set-up, along the lines already designed by the project management, and followed rigorously.

VIII. THE PROJECT AND THE ENVIRONMENT

8.1.1 **Demographic Environment.** The project fits harmoniously within the demographic environment of the country; its presence satisfies the strong, natural aspiration of the Ethiopians for education, aspiration which in turn, contributes to the qualitative recruitment and to the EEI becoming a school of excellence.

8.1.2 **Economic Environment.** As already demonstrated, the project has a very important function to play at the present stage of development of the country. Its presence is highly required by continuous increase in diversification and consumption of energy, including the significant introduction in the country of computers and other electronic products. The development of private sector, diversification of the internal market, increase of industrial production and more active participation of Ethiopia in the international markets are strong reasons favoring the setting up of the EEI. EEI will also create a human resource base, to be used for establishing a national manufacturing capacity in electronics.

8.1.3 **Natural Environment.** Shortage of raw material, increased cost of investments and energy, geographical position, including land-lockedness of the country are all environmental factors favoring the establishment of the EEI, which upstream and particularly downstream contributes to the protection of natural environment.

8.1.4 **Technological Environment.** The project will contribute directly to the acceleration of technological change in the country and will allow unlimited innovational opportunities, leading to performance improvement virtually in all main areas of activity: economic, social and cultural.

8.1.5 **Political Environment.** The strengthening of the private sector, decrease regulation of business and the development of the entrepreneurship will result in the diversification of the market and in an increase of the demand in goods and services. This will implicitly require well trained technicians in industry, informal sector and services. The large number of specialties envisaged in the long-term profile of the EEI will come by necessity one by one into consumer's and provider's attention.

8.1.6 **Cultural Environment.** Telecommunications and electronics in general contribute directly to the long-term preservation and rapid transmission of subcultures and cultural values

expressed through people's view, of themselves, of others, of organizations, nature, society, universe.

Briefly, there are only positive environmental effects by this project.

IX. FOLLOW-UP

9.1 Follow-Up Support Required for the Conclusion of the Project

9.1.1 Having examined the background to the difficulties encountered, the Mission believes that there is a need for follow-up support in a number of key areas, as follows:

1. The need to reassess correctly and realistically the number of technicians required by the Ethiopian economy for the next 10-15 years, in order to make correct periodic projections for student enrollment at the EEI. This will help the partners making firm decisions in connection with the technical education in general and in connection with the EEI in particular.

2. The need to recruit and train EEI permanent instruction staff for the sustainability of EEI.

3. The need for the Government to reassess its own affordability capacity and decide realistically how much resources it can provide to cover the local cost and the infrastructure cost of Electrical and Electronic Institute. Once this is clear, the Government decision regarding the support of the institute ought to be final.

9.1.2 Assuming favorable answer to the previous two issues, the need for support of this project continuing with full implementation into the next phase is firmly established. The form of continuation has already been defined and incorporated in a draft project document for the period 1993-1996, with an UNDP contribution of US$ 1.7 million. With some modifications to be suggested by the Mission in this Report, the document can be approved.

9.1.3 Considering the presence of an approved ADF loan providing TA to the EEI, whose disbursement should be almost simultaneous with that of the Phase II of the UNDP project, there is a need for integrating the two funding sources in one single Project Document.

The external funding should be matched by Government funding for the completion of infrastructure and for operational activities, to cover the entire duration of EEI-UNDP/ADF cooperation. The ADF loan will be identified in the document of the integrated project as Government cost-sharing contribution. Practical details concerning the implementation of this arrangement and the management of the merged project should be established locally through negotiations among the three parties. In the last analysis, it is for the parties directly concerned to officially settle this important matter in all details, according to a formula convenient to them which considers adequately the existing local constraints. Merging has enormous advantages for the Institute and for all parties concerned.

9.1.4 The Mission was informed that there is a need for urgent UNDP project approval, otherwise any delay may result in corresponding delays in effectiveness of the ADF loan. However, the Mission also believes that there is no reason for the Government and ADF to be in a hurry and spend money on expertise, equipment and alike as long as the trainers and the trainees are not recruited and under instruction.

9.1.5 The need to mobilize support not only for the immediate objective of the project, but also for the long-term development of EEI. Providing national qualified personnel in such areas as computer repair technology, computer management information systems technology, electro-mechanical repair technology, appliance repair technology, biomedical equipment technology, refrigeration and air-conditioning, computer information systems, radio and T.V. repair technology and others for the benefit of the public and private Ethiopian users deserves maximum attention. However, the Mission wishes to caution the partners in this project on the following:

a. The need to set limits, however, up to which a training institution, as EEI can stretch resources or/and diversify physically, organizationally, managerially and intellectually without jeopardizing the efficiency of its performance. In the Mission view, EEI alone could hardly accommodate at any time in its instruction programme all specialties mentioned in the CTA's final report on the project ETH/88/011. It may be more convenient that at least some of those specialties be distributed among selected national training facilities with adequate technical profile, a distribution always based on carefully implemented needs assessments and on a rigorous time schedule, resource sharing and workplan.

b. The need to build a successful and sustainable training institution should be recognized and promoted actively. The EEI should focus primarily on the quality of its outputs than on high volume of output. The quality of instruction is the first, and sometimes the only but sufficient condition for full and lasting financial and technical sustainability.

c. The need for mobilization of permanent and unequivocal support for the EEI first of all within the country. It is not sufficient that the Mission considers the project well selected and appropriate for the development of the country, while the support of Government institutions is uneven, covering the entire range of positions, from indifferent to very strong. The Mission considers that the future would judge its own work very severely if its support for the project would not be total and unequivocal: only schools of excellence such as the EEI aims at, are helping the country to put breaks to the rapidly widening technological gap between itself and the rest of the world. Since the Mission comes and go, it is for the EEI to wage a permanent national campaign for making sure that its role in the development of the country is recognized.

d. The need to treat gender issues seriously at the time of enrollment, and to make sure that women composition in the teaching staff and in trained population is not lower than 12-13% at the beginning, increasing it gradually by the year 2000.

e. The need for management and staff stability. The Mission has had an opportunity to study in detail technical, operational and managerial aspects of the project and wishes to offer a word of caution: the EEI project as it now stands is not without technical and managerial complexity, and in the form presented in the new project document and in the ADF Appraisal Report strongly suggests even greater operational complexity in the future. The Mission, however, is of the opinion that the project can be controlled perfectly well if:

- o The stability of the project personnel, national and expatriate, is maintained to the maximum extent possible.

- o The number of trainees admitted each year is gradually increased from maximum one hundred to two hundred fifty for the period 1994-2000 (from 100 to 150 for 2 year education, and from 0 to 100 for short-term

participants).

- The instruction specialties at EEI are gradually increased, the process placing emphasis always on the continuous consolidation of the existing specialties.

- A careful and independent need/capacity assessment of the EEI is performed before any new specialty beyond those just mentioned is introduced.

- A common management of the integrated project incorporating the ADF loan and UNDP Phase II funds is established and prevails in all respects.

- At the next Tripartite Review Meeting, a thorough internal and critical re-appraisal of the EEI institutional and financial constraints, risks, outputs and expectations be performed, so that all parties will satisfy themselves that the Institute is exactly what they expected to be.

9.1.10 The Mission debated at length the institutional arrangements for EEI. All alternatives were considered, including the placement of EEI elsewhere, not to be affected by the financial position of EELPA due to currency devaluations and its increasing operating costs, as it is presently the case. The Mission considers that the special relationship between EEI and EELPA is an organic one of a long date, based on mutual interest and professional interface. In light of this special relationship, it is important to provide EELPA with the necessary mandate and the budgetary support, at least for the initial period of six years.

9.1.11 The Mission strongly favors the development of a successful instructional institution of academic excellence, able to serve competently the requirements of the Ethiopian economy and to put it in a leading position on external markets. In Mission's opinion, the project should be continued based on the general lines envisioned by the formulation Mission of 1990, with sufficient resources and with a better focused and more correctly designed workplan for the coming phase. The main difference will consist in moving the gravity of training of trainers from abroad into the country. The project continuation can be conceived along the lines of the draft project document for the second phase and approved. This Report will offer a succinct outline to assist in the finalization of the document. This finalization is not possible without detailed consultations among the three parties. The former CTA is the best

equipped Expert to do this job expeditiously and competently.

9.1.12 There is a need for the project coordination mechanism to be firmly established by formally setting up of the Governing Board before the approval of Phase II. In this case, if the local rules permit, UNDP and UNIDO representatives to be allowed to participate in the Board's meetings as observers would be ideal. This arrangement would facilitate their most effective coordination and monitoring of the project activities. The Mission has reviewed the membership of the Governing Board and that of the General Advisory Committee and recommends the following seat amendments:

Governing Board: Ministry of Mines and Energy
Ministry of Transport and Communication
Ministry of Industry
General Manager-EELPA
General Manager-ETA
Seat for private sector
Seat for private sector
Seat for UNDP (observer)
Seat for UNIDO (observer)

General Advisory
Committee: Ministry of External Economic Cooperation
Ministry of Higher Education
Ministry of Planning and Economic Dev.
Commission on Science and Technology
Addis Ababa University
UNDP/UNIDO
Student representative

9.1.13 As mentioned earlier, for the sake of management effectiveness and simplification of operations, there is a need for merging of UNDP and ADF inputs through building up one single project document in which the ADF Technical Assistance funds (about US$ 5.4 Mil) are identified as Government cost-sharing contribution. This, among others, would considerably eliminate project input-output coordination problems, staff animosities and double accounting which could become redundant, cumbersome, confusing and difficult to manage. Merging would strengthen considerably the management of the project at all levels.

9.1.14 Complementing this arrangement with an integrated Workplan incorporating UNDP and ADF funds, would represent a gigantic logical step towards efficiency. The distribution of the plan in an updated form to all parties before the bi-monthly meetings of the Governing Board of the EEI will certainly mark a new era in the life of this project. The plan should become one of the project activities introduced as such in the project document. The draft of the plan should be circulated before the finalization and agreed by the coordination mechanism.

9.2 Main Financial Features of the Integrated Project

9.2.1 In building the integrated project, the following elements should be kept in mind:

1. The base of work on this subject is the undated UNDP Project Document whose cover page mentions "TOTAL UNIDO BUDGET: US$ 1,718,250" and the document dated January 1992, titled "ELECTRICAL AND ELECTRONIC INSTITUTE PROJECT PROPOSAL SUBMITTED TO AFRICAN DEVELOPMENT BANK". Further, since the entire approach of the draft project document for the second phase follows the same project strategy vectors which led the preparatory phase to failure, the strategy of the revised project should take into consideration and apply creatively all pertinent comments, lessons and recommendations deriving from this Evaluation Report.

2. Since the budget of the ADB project totals US$ 7,259,000, which is far above US$ 5.4 Mil.approved, efforts will be made to obtain a total integrated budget for ADB and UNDP assistance within the limit of the aggregate sum of US$ 5.4 plus US$ 1.7 = US$ 7.1 Mil. Any possible increased contribution by UNDP or other external source might be used against the local operating costs, if the Government has no ability to pay in full its obligations during the first three-four years of operations. The Mission recognizes that this is a very delicate matter which should be negotiated by partners directly.

3. The integrated project should incorporate, besides outputs comprised in the two documents, all outputs or parts of outputs not executed during the preparatory phase. Of special importance are the appointment and training of instructors and the completion and equipping the EEI library.

4. The expertise should be kept at minimum in view of Government providing most of local teaching staff (instructors) who will become bearers of M.Ed. in the country, based on o-j-t and fellowships. The expertise will be used to polish teaching staff pedagogically through lecturing, and working with students on model courses basis. Furthermore, the amount of expertise provided by the ADF loan should suffice for the combined needs of both projects. The provisions for the CTA post should be reduced to 36 man/months from 48 m/m, with the difference (12 m/m) allocated for training instructors (ref. all 8 activities under output 2 not implemented during the prep. phase). More expertise should be allowed if considered vital.

5. Appointment of instructors bearer of master degree and engineering degree, who will enroll in master studies in education at the AAU, results in considerable reduction of needs in expatriates so that the identified requirements in expertise in the UNDP second phase project can and should also be satisfied from the ADF loan, particularly because following provisions are either unnecessary for reason of duplication or, simply not essential or affordable at this time:

o Elec. Power Instal. Technology	24 m/m (it appears to duplicate UNDP project provisions).
o Physical education	6 m/m
o Academic Skills Center	4 m/m
o Techn. Transfer Center	4 m/m
o Learning Res. Media Center	4 m/m
o Short-term Consultants	6 m/m
Total m/m saving on original provisions of ADF:	**48 m/m**

The elimination of these provisions will also result in better focus on essential activities and reduce the complexity of the project.

6. Concluding on expertise, the integrated project will finance 132 m/m of expertise originally included in the ADF loan, plus 48 m/m to satisfy the requirements of the Second Phase UNDP project (less CTA post which was a duplication), less 2 m/m of unidentified expertise, less travel and other personnel costs, which will be identified under contingencies for which more than US$ 640,000 has been

reserved.

Total costs for expertise: 180 m/m x US$ 9,000/mo = US$ 1,620,000

9.2.2 Since the instructors possess already or will obtain their degrees in Ethiopia, in order to perform at a level in line with the requirements of EEI, they will benefit of on-the-job training by expatriate experts and of training based on fellowships. Compared to the past conception regarding instructor training, in the new concept, the training abroad should take place in two visits, each of shorter duration (2-3 months). This will result in increased monthly fellowship costs, but it should made it more profitable, better focused and, hopefully, less tempting to convert visits abroad in permanent residence. Therefore:

1. The cumulated training estimations of the three projects are: 156,000 for the prep. phase, US$ 230,000 for the second phase, and US$ 267,000 for the ADB project; that is, a total of US$ 653,000. Considering that EEI would have a total of 30 permanent instructors by the end of the next phase of UNDP/ADB/UNIDO project, the average training needs will amount to:

   30 fellows x 6 mo.each = 180 m/m of fellowships.

   Total cost of training is: 180 m/m x US$ 3,000/mo.=US$ 540,000

9.2.3 The cumulative provisions for equipment of the two projects are as follows:

	ETH/88/011 (Ph. II)	ADB LOAN
Expendable Equipm.	US$ 15,000	---
Non Exp. Equipmt.	US$ 505,000	5,400,000

1. Total estimations in both projects are US$ 5,920,000. This amount comprises imported building materials (345,000), project vehicles (210,000), books, furniture and laboratory equipment. This is the chapter where, in the view of the Mission, part of reductions will have to be operated. Following proposals are made:

a. return of the cost of equipment purchase effected in the first phase US$ 243,000. Apparently, this amount was used for the purchase of equipment for the HTC laboratory and for Electric Power Installation laboratory.

b. because of resource problem, certain categories of equipment are considered less essential for achieving the immediate objective of the EEI, and its purchase canceled or postponed for a latter date. This takes also into account a strategical consideration of capital importance: the need to focus on essential activities until EEI takes off.

Physical Education	200,000	
Academic Skill Center	265,000	
Technology Transfer Center	75,000	
Learning Resources/Media Center	450,000	
High Technology Core	320,000	(equipt prov.Ph.I)
Learning resources	450,000	
Power Technology	300,000	as above
Vehicles (a new one bought recently)	100,000	

c. After making above reductions, the resources required under the credit line 4.99 are US$ 4,262,000. The Mission considers that this is a very considerable amount of money which would allow equipping the EEI in excellent conditions. It is worth hiring a high class education equipment specialist to assist the institute in equipment selection. Using experts specialized in various sections of the EEI alone would lead to biased solutions, unless their proposals are finalized by an independent Consultant. The estimation of equipment for various specialized laboratories appears to be either too generous or too costly.

9.2.4 The total estimated cost of the integrated project is as follows:

Expertise:	1,620,000
Fellowships:	540,000
Equipment:	4,262,000
Total:	6,422,000 plus 10% contingencies, equals
TOTAL:	7,084,000 VsV US$ 7.1 Mil. available.

NOTE: contingencies will be utilized in priority for formulation of the integrated project document, support of special relationship between EEI and AAU, ECATC, TTC, equipment Consultant, Expert travel, Evaluation Mission, miscellaneous, and others.

9.2.5 Referring to other key elements of the draft, the following remarks seem pertinent:

a. Development objective is acceptable;

b. Immediate objective of the UNDP project is already too heavy and complex to incorporate any ADF objective related to ADF inputs. Moreover, the straight activities erroneously inserted into the immediate objective of the UNDP project document should be taken out. They are a repetition under a different form of the outputs which follow. Preferably, more than one or two immediate objectives should be formulated for the integrated project, grouping such key outputs as: completion of infrastructure; setting up programs, curricula, academic and administrative rules and regulations of EEI functioning; setting up various departments and sections/specialties; training instructors; training technicians; regionalisation and internationalization; building in-country and out-of-country special relationships; sustainability measures, etc. Each such objective will be followed by clearly identifiable outputs and related activities, proper cost estimates, time frame, quantities and quality indicators, etc. It will be particularly beneficial for the project management to have each specialized program under separate objective or output. Thus, any future changes in priorities could be easily reflected in amended project document.

X. CONCLUSIONS

10.1 The project continues to enjoy priority and political support by authorities at all levels.

10.2 The Mission ascertained that the project does not represent a duplication to any of the existing training capacities in the sponsoring institutions (EELPA and ETA) and to any other school in the country.

10.3 EEI fills a gap between two large categories of professionals relatively well represented in the country: in-service trained technicians and engineers.

10.4 The project fits perfectly into the demographic, economic, technological, political and cultural environment of the country. It is more than timely, and satisfactorily placed institutionally.

10.5 This is a high-tech project of unusual complexity which requires superior qualified personnel for the management of all aspects related to organization and functioning of the Institute. Such personnel, in extremely limited number but of good caliber, was made available by Government and UNIDO to the project during the preparatory phase I.

10.6 The Development Objective as reformulated is still relevant and it will continue to be so during the second phase. The immediate objective as well as the project outputs were correctly set. It is the strategy adopted to achieve them and the quantitative targets which are challenged.

10.7 The original project design is straightforward. However, the project implementation strategy is not in line with the realities of the country's economic, political, demographic, cultural, educational and technological environment: the project design does not place sufficient emphasis on utilization of national technical capacities and does not provide for a strong and effective coordination mechanism. The main error of the project consists in the original target of training large number of instructors(50) for master degree in education abroad, an expensive undertaking which no country could afford today.

10.8 The second important error consists in loosing focus in implementing outputs and activities. One example is accelerating twinning arrangements, while the project implementation is by far not ready to take advantage of twinning earlier than during the next phase and beyond. Another, is the concern for establishing a number of centers of excellence at the EEI, most of which representing a duplication to similar entities in Addis Ababa.

10.9 As originally conceived, the Phase I of this project is nothing else than the Preparatory Phase of a major project. Consequently, the implemented portion of the project has no relative or absolute value and represents a straight loss of the order of millions of dollars unless Phase II follows. And vice-versa, the second phase cannot be implemented successfully without benefitting of key outputs planned to be delivered by the first phase. This interdependence underlines the unity of the project. Nevertheless, the division of the project into two phases is commendable strategically as it allows for project evaluation to ensure the reliability of a set of implemented activities and outputs, before another set succeeds. Project continuation should be authorized providing that all outputs not implemented in the preparatory phase are integrally incorporated in Phase II. This integration should take into consideration the recommendations contained in this Report and adjust the project strategy and logical framework accordingly.

10.10 During the implementation of the preparatory phase, the project failed to become fully operational as anticipated. Because of the strong interdependence of outputs in generating the project's immediate objective, the non-delivery of output 2 (fifty trained or upgraded instructors), output 5 (first batch of 150 trainees admitted and start instruction) jeopardize the implementation of outputs 1, 3 and 4 and the entire project.

10.11 The suppression of output two and partial suppression of output one by the only TRM held by the project must be rectified in Phase II. This rectification, together with Government implementation of the output five at the minimum level of enrolment of 900 trainees, should represent preconditions for resuming full-fledged UNDP assistance. An appropriate response to the decision regarding cancellation of EEI permanent academic staff would have been to suspend UNDP assistance. Thus, more than US$400,000 in questionable expenditures would have been prevented.

10.12 The coordination arrangements have not worked properly as they were envisaged to be formalized only in the second phase. However, a stringent need for appropriate and permanent coordination mechanism was felt during the first phase. Coordination is essential and

always beneficial in the case of intricate institutional arrangements which represent a major challenge, particularly in a climate of financial constraint. The lack of a strong coordination mechanism for the project is, to a great extent, responsible for the non-attainment in full of the project outputs. This is so mostly because not all Covernment agencies concerned were involved effectively in problem-solving process.

10.13 The preliminary workplan was too sketchy to be useful, seriously considered and followed by the project management. Consequently, an essential management tool did not help the project and the concerned parties.

10.14 The potential interface with and benefits to be drawn from the private sector by EEI are marginally mentioned by the document and almost totally ignored by project management.

10.15 The overall duration allocated for the implementation of the project's preparatory operations, if executed as originally planned, appear to have been too short. Nevertheless, the training of instructional staff did not commence as envisaged and the first batch of trainees did not start instruction. Since these are time consuming operations which were not implemented, definite conclusions on project duration can not be drawn at the time of Mission visit.

10.16 The anticipated number of yearly trained technicians for the next six to seven years may have been overestimated by the project document. It appears that much more realistic figures would be needed, based, if possible, on a fresh and professional needs assessment. In the meanwhile, the Mission believes that a linear increase between now and the year 2000 in the enrollment, from 100 to 150 highly trained technicians for two years of education at EEI, and a similar increase from 0 to 100 technicians attending shorter courses, during the same period, would be reasonable.

10.17 The number of permanent EEI instructors to be trained is dictated, in this type of projects, by an average student/instructor ratio of about 9/1. For a better ratio much depends on affordability. A full debate on this aspect would be profitable for the project as the higher the ratio is, the lower the quality of training would result.

10.18 The UNDP/UNIDO involvement with this project is to be commended as far as their lead in introducing an important program in training high level technicians in two vital areas of national development, energy and telecommunications. The program has been joined

by the African Development Fund, which is expected to contribute to the diversification aand strengthening the capacity and the capability of the Institute. The interest of the ADF has beeen won by the relevance of the project objectives.

10.19 The cooperation between UNIDO and UNDP at the project level has not servved the project well. It should be brought in line with standard UNDP-Executing Agenncy arrangements and it should be structured locally based on a well designed integrated workplaan, updated bi-monthly and strengthened to maximize control over the limited resources availablde.

10.20 The establishment of the second year specialty programs and laboratories remaains a desiderata as long as the start up of the first instruction year at the EEI is repeatedly delayeed. For this basic reason the second UNDP phase is in abeyance and the ADF loan of about UUS$ 5.4 million to the EEI normally may not be disbursed. It would be unacceptable to spend goood monies on technical assistance and equipment needed by EEI during the second and later yeaars while key operational activities are not advancing.

XI. FINDINGS ON GENERAL RESULTS OF PROJECT

Suspension of key project activities such as recruiting and training trainers and enrollmeent of trainees render all the other project outputs unusable. The classrooms, labs, dorms aand cafeteria of the Institute as well as its administrative block are clean, inviting to work but totaally empty. Some inside space is taken by electric and electronic equipment, well packed in boxxes but devaluating fast. Most of equipment is neither installed nor tested, and its warranty is running short. Curricula for High Tech Core and Advanced Specialty Training, which direect training programs in line with requirements of the industries concerned, may have a highher longevity. These are the main outputs of ETH/88/011 which may survive for some time but nnot for long. They are in jeopardy if the project does not resume implementation soon.

11.1 Factors Promoting the Project

11.1.1 Fifth Country Programme being appropriate, supportive and focused.

11.1.2 All three parties concur o.1 the project priority and necessity.

11.1.3 Supportive attitude from the main Government agencies concerned. Thhis often leaves the impression that lack of operational budget is a conjecturral

problem, combined with unnecessary administrative complications rather then lack of political determination.

11.1.4 Optimistic attitude to the EEI on the part of the National Project Coordinator.

11.1.5 Good technical inputs from the CTA and consultants.

11.1.6 Promotion of the ADF loan meant to strengthen the EEI

11.2 Factors Inhibiting the Project

11.2.1 No funding for the running costs of EEI.

11.2.2 Highly questionable strategic decisions by the TRM.

11.2.3 No proper monitoring, useful workplan and cost plan.

11.2.4 No effective coordination

11.2.5 No critical interrogation of progress reports.

11.2.6 No focus on essential outputs and activities

11.3 Main Problems Faced by Project

11.3.1 It is the opinion of the Mission that no substantive problems of particular gravity other than some highly questionable decisions of the TRP Meeting are faced by the project. They account for project having only achieved approximately 58% of total outputs. The difference can be achieved in relatively short time and with relatively limited financing, once the budgetary problems for operating the Electrical and Electronic Institute are satisfactorily solved, and once the original project strategy followed. Key elements of this strategy, accompanied by amendments, have been presented by the Mission in previous chapters of this Report.

XII RECOMMENDATIONS

12.1 Efforts to integrate the project's operational budget in the national central budget should continue with particular vigor. Funds availability should be ensured for the first two academic years (1993-1995), and formal commitment should be given by the Government for four more years. This should ensure smooth, long-term running of operations and allow the EEI

management to focus energies on academic and management problems. The central budget of the Government should support the EEI until other sources of income complement the efforts by the state and will become gradually preponderant in covering current expenditures of the EEI. To this effect, a detailed strategy plan should be developed by the Institute with the help of EELPA and the Executing Agency. Action by Government and UNIDO.

12.2 Efforts to retain the project into the Fifth Cycle Country Programme should continue. The project's support by UNDP should be firm and become effective only after the problems of short and medium-term funding of the EEI operational expenses are satisfactorily solved. The approval will be given on a revised Project Document. integrating UNDP and ADF funds, effected along the lines set in this Mission Report. Action by Government and UNDP.

12.3 Convene joint meeting Governing Board-TRP to discuss this Evaluation Mission Report. In case the continuation of the EEI implementation is decided, the approval of the UNDP assistance should be conditioned by partners' full agreement on:

(a) reinstating the original project strategy regarding EEI hiring and training its own permanent instructional staff.

(b) the EEI permanent staff should preferably possess Master degree. Whenever instructors do not possess such a degree, successful engineering teaching experience might be a substitute. Alternatively, efforts should be made to obtain Master Degree in Education locally, based on specially designed arrangements EEI-AAU. UNDP financial support in this respect should be provided. Staff hiring should be gradual, extended over up to two years, in order to ensure quality and proper management. It should start with nomination of a minimum 10 instructors before the approval of the assistance for the second phase, to reach 30 instructors by the beginning of the third year.

(c) the enrollment of 90 trainees for the first academic year

(d) satisfactory, medium-term solution to the operational budget of EEI is found.

Action with respect of (a to d) by Government, UNIDO and UNDP.

12.4 No financing in TA, equipment or training for the benefit of the EEI should be made by UNDP before final, favorable and reliable solution is found to the operational budget of EEI. Once this solution exists, and once the trainers (minimum 10 at the beginning) and the trainees (minimum 90) have been recruited, the TA funds for the full-fledged operations of project ETH/88/011 should be released. Action by Government and UNDP.

NOTE: The decision adopted by the TRPM of 10/11/92, giving up completely the idea of EEI permanent staff, basing EEI instruction on part-time AAU staff, should be considered totally unacceptable to UNDP as it jeopardizes the sustainability of EEI.

12.5 Setting up and formalizing the coordination arrangements for the project represent a stringent necessity. Formally instituting the EEI Governing Board and General Advisory Committee are logical and long overdue actions. The Board's rules and regulations are defined in the Project Document of ETH/88/011 Phase II and the revised membership is in the 'FOLLOW-UP" chapter of this Report. Action by Government, UNIDO and UNDP.

12.6 In order to facilitate project resumption process, once resources for local costs are available and the principle of EEI permanent instruction staff accepted, the following activities should be implemented in sequential order, as part of the resumption scenario:

12.6.1 Officially nominate the NPC and the CTA. The CTA should be appointed for minimum three and maximum six months, through existing financing of ETH/88/011 (Preparatory Assistance). His task is to assist parties to negotiate and conclude an integrated project Document, comprising financial inputs from ADF and UNDP and to assist in preparatory activities not executed in the preparatory phase which creates conditions for full-fledged implementation of the project. Action by Government, UNIDO and UNDP.

12.6.2 Set-up formally the coordination mechanism. Action by Government.

12.6.3 Enroll and train minimum 10 instructors on campus and on fellowship. Action by Government, UNDP and UNIDO.

12.6.4 Enroll incoming first two year generation of 90 students to the High Technological Core courses. Action by Government and UNIDO.

12.6.5 In case the principle of EEI permanent instruction staff is not accepted by the other partners, UNDP should regretfully withdraw from this project. Action by UNDP.

12.6.6 In case long-term suspension of the project is forced due to lack of resources by the Government and no other source is found to cover operational expenses, UNDP may exceptionally consider paying for local cost of the EEI, totally or partially. Priority ought to be given to the recruitment and training of instructors. Action by UNDP.

12.6.7 Approve the merged UNDP/ADF project, and release funds for expertise and equipment gradually, synchronized with availability of counterparts and enrolment of students into the first year of instruction (HTC) and into various specialties of the second year of instruction. Action Government, UNIDO and UNDP.

NOTE: The synchronization of UNDP/ADF inputs with activities should be exercised through a tripartite mechanism of the project which should be instituted and used effectively by UNDP, Government and UNIDO in order to avoid resource wastage. Releasing funds by UNDP should be effected only when all other conditions exist for implementing operational activities. Experience shows that UNDP should be deeper involved in project management. Any alternative to this, resulting in strengthening the relationship activities-inputs and better suited to local conditions, may be considered.

12.7 To ensure conditions for long term sustainability, the following actions are recommended:

12.7.1 Strive for academic excellence as base for national, regional and international recognition. Action by government and UNIDO.

12.7.2 Ensure high quality technical instruction staff for EEI. Make maximum use of local conditions, of the AAU technical capacities, the new library and laboratories set up with TA funds as well as of international experts and of fellowships abroad to optimize instructor training. Elaborate detailed individual workplans for instructor training. Action by Government, UNIDO and UNDP.

12.7.3 Ensure funds for smooth long-term running of the EEI and stimulate academic contacts with other universities. Establish opportunity costs for special relationship (twinning) with 1-2 schools of similar profile and recognized reputation in developed countries. Action by Government, UNIDO and UNDP.

12.7.4 Enhance further professional relationship between Addis Ababa University and EEI, in terms of faculty exchange, instructor training and accreditation, technical seminars, library resources and other similar contacts. Conclude service agreement. Action by Government, UNIDO and UNDP.

12.8 The risk analysis of the project should be carefully reviewed to make sure that it is in line with national and international realities. Include additional risk elements suggested by this report. Action by Government, UNIDO and UNDP.

12.9 The management of the integrated UNDP/ADF project should be satisfactorily solved locally. As already explained, both projects should be merged in one project document whereby ADF funds become "Government cost-sharing contribution". Consequently, one single integrated workplan should be prepared for both, UNDP and ADF outputs, activities and inputs and distributed periodically to all members of the Governing Board, UNDP, and ADB. The workplan should be kept updated as implementation progresses and distributed every two months to be used by the Governing Board members, UNDP and UNIDO as required. The plan should be provided with quantitative, qualitative and cost indicators and with timeliness and responsibilities assigned for individual inputs and activities. Action by Government, UNIDO and UNDP.

12.10 The potential benefits and services brought by the project to the private sector should be identified and spelled out clearly in the project document. Action by Government,

UNIDO and UNDP.

12.11 The EEI should aim for a smaller number of students admitted than originally planned in order to reach the level of excellence. The increase in trainees enrollment for short and long-term training should take place progressively from about 100 in 1993 to a total of 250 in the year 2000. Action by Government, UNIDO and UNDP.

12.12 Special attention will be given to female enrollment. Minimum percentage of female should be no less than 10% at the time of launching of the Institute, to increase gradually and double by the year 2000. Action by Government and UNIDO.

12.13 Any new addition in technical specialties at the EEI should be proceeded by capacity assessment studies on techno/economic and academic opportunity, national interests and affordability, alternative solutions and priorities. The principle of achieving academic excellence should prevail in all circumstances. Such studies should be executed by independent consultants. Action by Government and UNIDO.

12.14 No other institutional arrangements should be made for the EEI, but strengthening the existing ones by well prepared meetings of the Governing Board which should be a discussion forum among the interested parties. Action by Government, UNDP and UNIDO.

12.15 The EEI curricula should be reviewed and revised with the accreditation guidelines in mind. The revision to be performed as continuous process, making full use of the self-evaluation system. The following additional short courses might be considered: management, non-conventional energy and environment. For specialties related to business, courses in Electronic Data Interchange (EDI) would be appropriate. Action by Government and UNIDO.

12.16 Particular attention and urgency will be given to the completion of the infrastructure of the EEI. Maximum priority should be received by the Library, which must be endowed with sufficient text books, specialized documentation and reference material. Action by Government, UNIDO and UNDP.

12.17 PPERs should be prepared by the CTA biannually and the TPRM should be held with the same periodicity for the next three years. Action by the Government, UNDP and UNIDO.

12.18 The partners should maintain a strong, highly resilient monitoring system, based on separate responsibilities on each side. Stability of the officials in charge of the project will be a clear advantage. Action by Government, UNDP and UNIDO.

12.19 Next in-depth project evaluation should be organized two years after the date of approval of the integrated UNDP/ADF funded project by UNDP. Action by UNDP and ADF.

XIII LESSONS LEARNED

13.1 Committing resources and formulating strategies in UNDP supported projects should be guided by realism, common sense and affordability irrespective of the source of financing.

13.2 Focusing on selected key outputs and related activities results always in faster and effective building a developmental backbone critical for the project implementation. Latter, if resources allow and strategically justified, less critical activities could be considered. On the contrary, starting a project implementation by focusing on peripheric activities artificially brought into the project mainstream by giving them undeserved visibility and importance, jeopardizes the project.

13.3 Standard tripartite arrangements for UNDP project monitoring must be effective and work efficiently, based on accurate, professionally prepared reporting and workplans. They should be always strengthened in the initial stages of implementing institution building projects, particularly when technical backstopping by executing agent is weak. Trusting that agency to do the work on behalf of UNDP could prove to be the worst of arrangements.

UNDP/UNIDO Project ETH/88/011
Electrical and Electronic Institute.

ANNEXES

1. ANNEX I — Mission Terms of Reference
2. ANNEX II — Mission Report (draft) as discussed with Govt., the UNDP and UNIDO representatives on 16 September 1993 (Debriefing Meeting).
3. ANNEX III — Minutes of the Debriefing Meeting of 16 Sept.'93.
4. ANNEX IV — In-country contacts of the Evaluation Mission
5. ANNEX V — Workplan of project developmental dispositive.
6. ANNEX VI — Organizational Chart of ELPA.
7. ANNEX VII — Evolution of the UNDP Budget.
8. ANNEX VIII — Equipment Inventory.
9. ANNEX IX — Organizational Chart of EEI.
10. ANNEX X — Minutes of the Technical Meeting (October 1991)
11. ANNEX XI — Minutes of Tripartite Review Meeting (Nov.'92).
12. ANNEX XII — Country Map.

Annex I

DR. RODGER ECKHARDT
UNIDO-CTA
1 March, 1993

TERMS OF REFERENCE
FOR EVALUATION OF ELECTRICAL ELECTRONICS INSTITUTE PROJECT
DP/ETH/88/011

1.0 CONTEXT

1.1 Project Development

To date, the Ethiopian Electrical Light and Power Authority (EELPA) and the Ethiopian Telecommunication Authority (ETA) training institutes have been responsible for providing all levels of training for their respective industries. This includes all the high technology core programming as well as the highest level of equipment related specialized training.

1.1 Recognizing the importance of the above mentioned two industries, the government envisioned the establishment of an Electrical and Electronics Institute as a remedial action to cope with the crucial deficiency of trained manpower at the technician level. The country's prior Ten Year Development Plan supported this vision making note of this manpower shortage and encouraged action to overcome the deficiency. Thus, EELPA began construction of the new Electrical and Electronics Institute in 1985. At present, building construction is nearing completion, with the exception of an administration building and some other facilities which are to be added in the near future.

The UNDP developed a keen interest in the project and subsequently sponsored a study to determine whether UNDP should contribute funds (seed money), toward development of the EEI. The study led to a UNDP funding award with UNIDO appointed as executing agency.

Additionally, and perhaps most importantly, is the recent recognition granted the EEI project by government and UNDP who placed the project in the 5th Country Planning Cycle for Human Resources Development.

1.2 Description of the Subsector

The subsectors to be served by this project include the Ethiopian Electric Light and Power Authority (EELPA), the Ethiopia Telecommunication Authority (ETA) and manufacturing industries. These subsectors constitute the largest utilities/industries in Ethiopia and they hold a vital role in the country's efforts to promote the rebuilding of essential power and communication infrastructure, downgraded as a result of recent widespread disturbances. Furthermore, these utilities/industries are relied upon to contribute directly to major country and regional "life blood" hydro and

communication projects, currently in various stages of implementation, directly affecting the lives of millions of Ethiopians in need of electricity and communication systems for living and working.

2.0 PROJECT EMPHASIS

2.1 Initial Mission of EEI

The initial mission of the EEI is to train middle to high level technicians (Industrial Technicians and Engineering Technicians) for the electrical power supply (EELPA), telecommunications (ETA) and manufacturing subsectors.

The curricula to be implemented with the support of UNDP funding consists of a first year course of study, referred to as the "High Technology Core", and two advanced specialty programs, namely, Electrical Power Technology and Electronics Telecommunications Technology: each of one additional year.

2.2 Vision for the EEI

The EEI, with a mission to provide technician level training programs, is an institution of higher education equivalent to grades thirteen and fourteen, or the first two years of university level. The EEI will serve as a regional center for a number of East African countries and will offer programs of international calibre, to be accredited by the appropriate accrediting agencies in-country and internationally.

3.0 PROJECT DESIGN

3.1 Development Objective-Phase I

The institute was envisaged to be established in two phases. The Development Objective of the project, is to provide public/governmental utilities and industries with trained technicians, with EELPA and ETA being specified as recipients of the UNDP support effort.

3.2 Immediate Objective-Phase I

The immediate Objective of Phase I is to initiate the Electrical Power Technology (EPT) and the Electronics Telecommunications Technology (ETT) programs on the new EEI campus, thereby, assisting the government in the EEI's establishment.

3.3 Outputs-Phase I

The Outputs of Phase I include:

1) the development of the High Technology Core (HTC) and advanced specialized EPT and ETT curricula;
2) the identification, purchase and commissioning of the classroom and laboratory equipment, furniture and supplies for the HTC, and the specification of the equipment for the advanced level of EPT and ETT curricula;

3) completion of the first year of HTC training;
4) identification of two twinning institutions (one from a developed country and one from a developing country), and the development of a twinning workplan;
5) fellowship training carried out; and
6) administrative staff trained.

The UNDP funding, assistance was required to provide international expertise, twinning arrangements, training and limited supporting equipment in order to accelerate and sustain the process of meeting the manpower need. The total contribution by UNDP for PHASE I is US$ 921,043.

3.4 UNDP/UNIDO Phase II

A UNDP EEI Project Phase II, is anticipated. The Phase II is expected to complete the establishment of the institution, especially, in the area of instructional program development and the related training for the EPT and ETT programs. To date, we have identified technical assistance, fellowship training and equipment needs, which total about US$ 1,000,000.

4.0 FOLLOW-UP ASSISTANCE

The government has recognized that the UNDP funding support emphasizes technical assistance and training. In light of this acknowledgement the government agreed to continue a search for bilateral and/or other assistance that would enable students to be trained in the curricula content as outlined in the document; i.e., the UNDP contribution was insufficient to fully equip the laboratories necessary for advanced level training.

In order to finance the complete establishment of the EEI, and at the government's request, the UNIDO Chief Technical Advisor (CTA), with the assistance of the National Project Coordinator (NPC), developed a proposal for a funding contribution from African Development Fund (ADF). The loan of US$ 5,415,946, (Birr 27,079,730), was awarded, effective 22/02/93, and is designated for building construction materials, technical assistance, equipment and fellowships/training. This loan, when added to the UNDP contribution of Phase I, will bring the total funds available for establishment of the institution to over US$ 6,330,000.

5.0 In February, 1990, a team of two experts representing UNDP was contracted by UNIDO and ILO respectively, to develop a project document for the establishment of the EEI. The document was prepared prior to a major war effort within Ethiopia, during the prior government's rule. By the time of the arrival of the CTA, Oct. 1991, the project had been approved but funded at a reduced amount from that noted by the consultants. Because the government agreed to seek extra funding, and such funding was obtained through the efforts of

the UNIDO CTA, as noted above, nothing was lost, and much was gained.

The project was also divided into two phases and a very significant dimension was added to the project expectations; notably, that of "Twinning" arrangements to be developed between two major universities and the EEI, one in a developed country and one in a developing country. The twinning concept is an exceptionally good one for it requires a tightness in the delivery of technical assistance and fellowship training through the development of Memoranda of Understanding(MOU), and it results in the establishment of long range, beyond end-of-project, technical assistance and training relationships between service institutions and the EEI.

Since the project implementation start-up, the project office has regularly sought and obtained the necessary support of EELPA which, in its role of implementing agency had to ascertain timely execution of the project's main outputs by, in particular:

- -assigning a Director for the EEI to work also as a counterpart for the CTA;
- -approving the cooperation of the Technology Faculty of the Addis Ababa University to help produce course outlines for the first year High Tech Core program and to provide part-time lecturers;
- -covering the clearance costs of training equipment supplied by UNDP and delivered through the part of Assab, or by air freight;
- -supporting the additional fund request of US$ 243,000 for the purchase of training equipment needed to properly equip the High Tech Core labs, by addressing such request both to the Ministry for External Economic Cooperation and UNDP for their approval, which was met.
- -bringing to the attention of EELPA's board chaired by the Minister of Energy and Mines key budgetary issues to cope with the EEI operational needs.
- -authorizing the EEI Director to participate in the study tour.

It should also be noted that ETA, following the initiation of the project, had early expressed its readiness to sponsor thirty students for the first two-year program to be offered by the EEI. The ETA had also participated in the study tour by sending one official responsible for human resource development activities in the organization.

5.1 Facilities

Although the facilities were nearing completion, as of February, 1990, all of the classroom/laboratory structures and some of the dormitories became occupied by military personnel preventing the use of the facilities for their intended purpose(s). It was only in November, 1992, that the military personnel evacuated the classroom/laboratory structure.

Following an extensive and costly (Birr 300,000) refurbishing effort by EELPA, the first education structure has now been readied for occupancy, as of 1 March, 1993.

5.2 Equipment

All of the equipment, furniture and supplies originally ordered for Phase I have been specified, bid, ordered, received and inventoried, with the exception of one order of laboratory bench tops which is currently being traced. Everything has been placed in storage or left sealed in containers. At present we are beginning to set the items in place. A proposal to increase the equipment budget line by an additional US$ 243,000, was approved and most of the items purchased therewith are on the way here.

The equipment ordered under Phase I will fully equip three High Technology Core laboratories, five classrooms, five instructors' offices and partially stock a small library housed in a large, future classroom.

5.3 Technical Assistance

Two technical advisors were employed to develop curriculum and have completed their assignments.

A UNIDO technical advisor, on-site for eight months, developed the advanced level Electronics Telecommunications Technology curriculum. The UNIDO Chief Technical Advisor/Electrical Power Technology Advisor, with the assistance of the NPC/EEI Director, developed the High Technology Core first year program and advanced level Electrical Power Technology curriculum.

The UNIDO-CTA remains on-site to assist the National Project Coordinator/EEI Director in establishing the institute and fulfilling other needs outlined in the project document. He has, in addition to his job description, developed successful proposals for ADF funding and written a Phase II proposal necessary for the completion of the EEI UNDP funded project (to be reviewed by the Evaluation Team).

5.4 Fellowship/Training Abroad

The NPC/EEI Director, ETA Manager for Administration and the UNIDO-CTA engaged on a two week study tour to identify two twinning universities and their related technical colleges in a developed country. Another study tour to a developing country is being planned. These tours are necessary to develop the MOU's with the twinning institutions. To date we have not put into place a fellowship program leaving unspent the US$ 121,000, designated for fellowship training.

6.0 PROJECT DESIGN

6.1 Under-Funding of Phase I, budget line 42.00.

One of the primary objectives of Phase I is to develop

and initiate the High Technology Core curriculum and to equip the specialty laboratories for the two electrical and electronics programs. As noted previously, this particular weakness was addressed, and we should add here, with a groundswell of support from UNDP, MEEC, UNIDO and EELPA management, resulting in a more than doubling of line 42.00, thereby providing sufficient funds to fully equip the laboratories, classrooms and offices, and to provide the related teaching software.

6.2 Project Objectives and Timetable

The project objectives to be accomplished during Phase I and Phase II are reasonable and in line with the EEI's needs for instructional programming development and staff training. However, the time needed for pre-school start-up activities, as well as the time necessary for the new government, with new authority figures both within the Ministry of Mines and Energy and the Ministry of Transportation and Communication, (which contain EELPA and ETA), to reassess the government's priorities, including whether the EEI should be a part of the 5th Country Planning Cycle for Human Resources Development, was not fully anticipated during the early days of document design, when drafting the project's comprehensive timetable.

The CTA, following his arrival, recognized the need for Phase I to be extended to 24 months in order for the first year of training to be completed, as required by Output #5. Following a technical review meeting October, 91, budget adjustments were recommended, and later approved, resulting in the project's extension to 21 months from 18 months, the maximum allowed while remaining within the approved budget. This project revision would have been adequate to ensure for the completion of the first year of instruction had the government met the EEI's projected scheduled opening of September, 1992. As of 01/03/93, we do not have instruction start-up. The reason advanced is simple. There is no approved operational budget, as required for the employment of instructors, administrators and other EEI personnel, etc.

The lack of governmental approval of the prepared operational budget, resulting in non-employment of EEI personnel, has a direct bearing on project management's ability to develop and carry-out fellowship training abroad or management training in-country; two other project requirements reflected in Output #6, and Output #4 respectively.

6.3 Project Phasing

As noted above, Phase I has met with some complications, most notably, finalization of the expected project outputs, due entirely to the ambitious time table established for Phase I and the lack of governmental response in a timely manner with operational budget approval. However, all is not lost. In fact, in the view of project management, with careful planning, together with a speedily approved operational

budget, we can still regain our earlier favorable position for satisfactory completion of Phase I and Phase II. Firstly, the time, to date, has been used to prepare for the institution's long range success, as noted previously. Secondly, assuming EEI start-up is soon, Phase II should give adequate time to complete all the outputs and fully establish the EEI.

7.0 PROJECT EVALUATION

7.1 Justification for the evaluation

The justification for the evaluation is found within the project document, p16: "An evaluation of the project should be carried out 6 months before the end of Phase I, to evaluate the phase, clearly identify the Phase II requirements and to assist in the preparation of the Phase II Project."

7.2 Evaluation Delay

The evaluation has been delayed two months, granting the government additional time to initiate college start-up. Start-up was scheduled for September, 1992, and then rescheduled for January, 1993.

7.3 Evaluation Objectives

7.3.1 Project achievement will be assessed and evaluated against the expected outputs.

7.3.2 Problems will be identified and the means for resolution suggested.

7.3.3 Project approach and design will be examined and suggestions made for improvements.

7.3.4 Necessary follow-up measures and the wisdom for the project completion and/or extension (Phase II) determined.

7.4 Composition of the Mission

7.4.1 One representative from UNDP with experience in project implementation in developing countries.

7.4.2 One representative from UNIDO in the field of Technical Education Management, with experience in establishment of new technical institutions.

7.4.3 Representation from the Transitional Government of Ethiopia; Ministry of External Economic Cooperation and/or Ministry of Finance.

7.5 Consultation in the Field

7.5.1 The mission will maintain close liaison with the UNDP-Resident Representative, the concerned government agencies of EELPA and ETA, the UNIDO - Country Director, the National Project Coordinator/EEI Director and the Chief Technical Advisor.

7.5.2 The mission is expected to visit the EEI.

7.5.3 The mission participants, although they are free to discuss all matters relevant to their assignment, are not authorized to make any comment on behalf of UNIDO.

7.6 Timetable and Report of the Mission

7.6.1 In so far as required, the UNDP and UNIDO representatives will be briefed at their respective headquarters.

7.6.2 Upon arrival in Addis Ababa, the mission representatives will be briefed by the Resident Representative of UNDP, who will also provide the necessary substantive and administrative support.

7.6.3 The mission representatives will attempt to complete their work within one week, starting in Addis Ababa in the last half of March, 1993.

7.6.4 Upon completion of the mission representatives' work, they will be debriefed by the Resident Representative of UNDP, senior government officials, the UNIDO-Country Director, National Project Coordinator and Chief Technical Advisor. The mission representatives will present their initial findings, conclusions and recommendations.

7.6.5 The mission representatives will complete their draft report in Addis Ababa and leave one copy of the draft with the Resident Representative.

7.6.6 The final version of the report will be submitted simultaneously to the UNDP and UNIDO Headquarters (3 copies each), and to the Resident Representative of UNDP (10 copies). The latter will be responsible for the formal submission of the report in 6 copies to the government.

8.0 Purpose and scope of the evaluation

8.1 Project related issues

8.1.1 To evaluate the design of the project.

8.1.2 To assess the progress towards production of the output which aims at the initial establishment of an Electrical and Electronics Institute, including the development of curricula, training of instructors and administrative staff, introduction of the 1st year programme, instruction and identification ot two overseas institutions for a "twinning arrangement" towards the eventual completion of the establishment of the Institute in Phase II.

8.2 Institution-Building related issues

The mission will review the following four issues:

8.2.1 Identification of needs, affordability and commitment.

8.2.2 Where and how was the need for a specific technical assistance identified?

8.2.3 Are the financial, human and technical resources available? (How has human resources development programme been carried out?)

8.2.4 How was the linkage between the Institute and other institutions identified?

Annex II

GOVERNMENT OF ETHIOPIA
UNITED NATIONS DEVELOPMENT PROGRAMME
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

EVALUATION OF PROJECT ETH/88/011
ESTABLISHMENT OF AN ELECTRICAL AND ELECTRONICS INSTITUTE

EVALUATION MISSION REPORT
(DRAFT)

ADDIS ABABA, ETHIOPIA

16 SEPTEMBER 1993

TEXTUAL INFORMATION

1. SUMMARY OF IMMEDIATE OBJECTIVES AND OUTPUTS

Immediate Objective 1: To assist in the initial establishment of an Electrical and Electronics Institute, including the development of curricula, training of instructors and administrative staff, introduction of the first year programme instruction and identification of two overseas institutions for a "twinning arrangement" for long-term sustained training opportunities (in Phase I) towards the eventual completion of the establishment of an Electrical and Electronics Institute (EEI) in Phase II.

Output 1.1
Curricula consisting of High Tech Core and Advanced Specialty Training, which directly fulfills the training requirements of the industries concerned, developed.

Output 1.2
Fifty trained or upgraded instructors for the EEI in the field of training methodology (pedagogic), use of audio-visual equipment, preparation and reproduction of training material.

Output 1.3
Equipment required for the Institute identified and finalized. Equipment for training of trainers and for the first year programme instruction and corresponding laboratories procured, installed and made operational.

Output 1.4
Three administrative staff trained.

Output 1.5
First batch of trainees admitted and instruction, including related laboratory work, carried out for first year Electrical Power and Telecommunications programme.

Output 1.6
Two overseas institutions identified for a "twinning arrangement" for a long term sustained training opportunities; and a work plan prepared to implement the arrangement in the Phase II and beyond the project. Fellowship training carried out.

2. FINDINGS ON PROJECT IDENTIFICATION AND DESIGN

2.1 PROJECT IDENTIFICATION

The project continues to enjoy priority and support by authorities at all levels. This is due, in part, by the key position held by energy and telecommunications in the life of Ethiopian economy. These sectors must be further developed and strengthened in order to support the expansion and diversification of industry and services for employment creation and for improving living standards in the urban and rural areas. The project is expected to serve the private sector (presently in an embryonic stage but gaining rapidly), and it will contribute to the creation and strengthening of future entrepreneurship capabilities all over the country.

The Mission was given all assurances that the project does not represent a duplication to any of the existing training institutions in the sponsoring institutions (EELPA and ETA) and to any similar schools in the country. There are, however, indications that, with the Institute becoming operational, EELPA would suspend long-term technician training, which is understandable. EEI fills a gap between task-oriented trained technicians and engineers.

This is a high-tech project of unusual complexity which requires superior qualified personnel for the management of all aspects related to organization and functioning of the Institute. Such personnel were made available by Government and UNIDO to the project during the preparatory phase I.

The project, however, failed to become fully operational during that phase as anticipated: the trainers (instructors) were not trained and the first class of trainees has not even been enrolled, while no firm date seems to have been established for starting instruction at EEI. Briefly, one of the most important outputs of the project was not delivered. Because of the interdependence of outputs in generating the project's immediate objective, the non-delivery of output 2 (fifty trained or upgraded instructors), output 5 (first batch of 150 trainees admitted and start instruction) and, less significantly, output 6 (two institutions identified for long-term twinning) jeopardizes the successful implementation of outputs 1,3 and 4 unless reinstituted in Phase II. Consequently, the Mission finds that the immediate objective of the project is far from being completely achieved.

Serious doubt exists that the "twinning arrangements" with the identified institution in a developed country would last longer than the availability of the fellowship funds reserved in the project budget. If so, alternative solutions should be found to ensure the long-term sustainability of EEI instruction programmes. As far as the south-south twinning arrangements envisaged in the

project are concerned, they have not yet been started. It seems logical to place all these arrangements later in time, when EEI will gain regional/international recognition as a school of excellence.

The coordination arrangements have not been formalized as they are envisaged in the project document for the second phase. However, an appropriate, permanent mechanism for systematic project coordination and support is missing at this stage. The formal instrument of consultation recommended for the second phase (EEI Governing Board and General Advisory Council),if established earlier, would have provided the coordination so badly needed from the beginning of the project. Coordination is essential and always beneficial in the case of intricate institutional arrangements which represent a major challenge, particularly in a climate of financial constraint. Apparently, unsuccessful attempts were made by the project management in the fall of 1992 to obtain the approval of the Council of Ministers for the institutionalization of the EEI Governing Board. The lack of the coordination mechanism for the project is, to a great extent, responsible for the non-attainment of Phase I outputs. And this is so because the Government agencies were not involved effectively in the problem-solving process of the project implementation.

2.2 PROJECT DESIGN

2.2.1 Adequacy of project design.

The Mission considers the project design as articulated in the Project Document to be adequate in principle and appropriate for the establishment of a technical college, but identifies several concerns:

2.2.1.1. As originally conceived, the Phase I of this project is nothing else than the Preparatory Phase of a major project. In normal circumstances, the implemented portion of the project has no relative value and represents a straight loss in the order of millions of dollars unless Phase II follows. Nevertheless, the division of the project into two phases is commendable strategically as it allows for project evaluation at midpoint. UNDP approval should be awarded providing that all outputs of the preparatory phase are integrally contained in Phase II. This can be attained only if the budget for the EEI local operating costs is made available by the government, and the project made fully operational. Unfortunately, this is not yet the case although, after one year of delay, the expectations of the other two partners (UNIDO and UNDP) are still high.

2.2.1.2 The implementation difficulties such as non-availability of the government operational budget for the EEI were underestimated, being marked "low" in the risk analysis of the project. It is the lack of operational funds which presently

represents the stumbling block against the progress of the project operations into the second phase. This shows that the analysis in question was not deep enough. Had it been, the project approval would have given with greater care and more activity would have deployed by all concerned to avoid the present funding crisis.

2.2.1.3. The development objective is somehow ill defined as it consists of the basic project activity (training) to reach the correct objective, which is "to satisfy national critical needs of highly trained technicians in the area of electric power and electronics, an acute gap in technical manpower requirements of Ethiopia". Substantively, however, the objective was correctly understood and implemented.

2.2.1.4. Often no qualitative and quantitative indicators were given for the project outputs, no firmly agreed timelines were set for their implementation, and no responsibilities in the document. Consequently, key activities and outputs regarding training of instructors and technicians have not been delivered.

2.2.1.5. The preliminary workplan was too sketchy to be seriously considered and followed by the project management.

2.2.1.6. The long-term character of the twinning arrangement with two overseas institutions and related sustainability benefits were over emphasized. This output(6) may take longer time and resources to materialize. In any case, it was placed to early in the project's life.

2.2.1.7 The potential benefits to be drawn by the private sector from EEI are not mentioned as they are emerging in the meanwhile.

2.2.1.8. The overall duration allocated for the implementation of the project's operations was overly optimistic: the training of instructional staff did not commence as envisaged and the first batch of trainees did not start instruction, although the project duration was extended and the costs increased.

2.2.1.9. The necessity for coordination among a large number of factors concerned with this project is mentioned in the document. However, no adequate arrangements were prescribed in the document to make the coordination effective.

2.2.1.10. The anticipated number of yearly trained technicians for the next six to seven years has been overestimated by the document. The Mission believes that much more realistic figures would be needed to count on for a relatively linear increase from 100 to 250 highly trained technicians with two years of education at EEI and on a similar increase from 0 to 100 technicians attending shorter courses, during the same period. Similarly, the number of instructors to be trained was overestimated. The project management seems to be aware of this and the latest figures are

more realistic. Unfortunately, there is no corresponding reduction in the requested funding.

2.2.2 CONTINUED RELEVANCE OF PROJECT OBJECTIVES

The Development Objective is still relevant and it will continue to be so during the second phase. The immediate objective was correctly set as well as the project outputs, except for the overestimated figures mentioned above (unfortunately, The Mission was unable to identify a need assessment for the main outputs of the project). The existence of a coordination mechanism could have been of particular help in this area, quantifying the project target with more accuracy.

The UNDP/UNIDO involvement with this important project of the Government of Ethiopia is to be commended for their lead in introducing an important subsectoral PROGRAM in training high level technicians in two vital areas of national development, energy and telecommunications. The program has been joined by the African Development Fund, which is expected to strengthen the capability and to increase the capacity of the Institute. The interest of the ADF has been won by the relevance of the project objectives. Assuming that the government will make operational funds available as committed, the project has all prerequisites to become an educational entity recognized nationally and regionally.

2.2.3. APPROPRIATENESS OF STRATEGIES ADOPTED

The strategies outlined in the project document are adequate, subject to the following:

2.2.3.1. Training of trainers and starting regular instruction for technicians has been delayed unnecessarily for one year because lack of operational funding for EEI operations.

2.2.3.2. Twinning arrangements with two overseas institutions "for long-term sustained training opportunities", envisaged within the adopted strategies, look rather dim as mutual advantages for participating parties are difficult to identify during the present phase of EEI setting up. While during the operational phase of the EEI, which might start soon, south-south twinning could be relatively easy to establish based on the strength of the EEI programmes. The north-south twinning, which is by far more important from the sustainability point of view, may encounter serious problems. Nevertheless, this twinning, if considered unavoidable, could be achieved and maintained based on an annual government allocation to be determined, starting at the completion of external assistance. This sum might be collected from foreign trainees attending short or long term courses at the EEI. The Mission also believes that part of the twinning needs could be satisfied through a special relationship between EEI and Addis Ababa University.

2.2.3.3. The establishment of the second year specialty programmes and laboratories remains a desiderata as long as the start up of the first instruction year at the EEI is repeatedly delayed. For the same basic reason, the ADF loan of about US$ 5.4 million to the EEI should not be disbursed . It would be a great loss to spend borrowed monies on technical assistance and equipment needed during the second year, while the first year of instruction is constantly delayed.

The project targets are correct and the timelines could have been achievable had there not been the lack of operational funding for EEI operations.

3. REVISION AND/OR CONTINUATION OF PROJECT

3.1 The Mission is in support of this project continuing with full implementation of the next phase. The form of continuation has already been defined and incorporated in a project document for the period 1993-1996 (45 months) with an UNDP contribution of US$ 1.7 million. With some relatively minor modifications to be suggested by the Mission in its Report, the document can be approved by UNDP.

3.2 Although this approval is apparently considered as extremely urgent as the ADF credit disbursement is contingent upon UNDP input and the establishment of a program management office, the Mission is unable to recommend the approval of the UNDP/UNIDO project at the present stage. The full approval is contingent upon the release of government funding for the EEI operational expenditures at the required level and to commit itself for the entire duration of the Ethiopia-UNDP cooperation with EEI. Apparently this release for the current fiscal year budget is eminent. It is for the parties directly concerned to officially settle this important matter in the interest of the EEI.

The Mission is equally aware that the delay in the UNDP project approval results implicitly in delays in effectiveness of the ADF loan. However, the Mission also believes that there is no reason for the government and ADF to be in a hurry and spend money on expertise, equipment and others as long as the trainers and the trainees are not identified and under instruction at the EEI; that is, until government funds for EEI operational expenses are available.

3.3 The Mission wishes to express support not only for the short-term objectives of the project, but also for the long-term development of EEI. Providing national qualified personnel in such areas as computer repair technology, computer management information systems technology, electro-mechanical repair technology, appliance repair technology, biomedical equipment technology, refrigeration and air-conditioning, computer information systems, radio and T.V. repair technology and others for the benefit of the public and private Ethiopian users deserves certainly attention. However, the Mission wishes to caution the

partners in this project on the following:

3.3.1. There are limits, however, up to which a training institution can develop without jeopardizing the efficiency of its performance. In the Mission view, EEI cannot accommodate at any time in its instruction programme all specialties mentioned in the UNIDO-CTA final report on the project ETH/88/011. Many of those specialties should be distributed among various national training facilities with adequate technical profile, a distribution always based on carefully implemented needs assessments and based on a rigorous time schedule.

3.3.2 In order to build a successful training institution, EEI should focus primarily on the quality of its outputs than on high volume of output. The quality is the first, and sometimes the only but sufficient condition for full and lasting financial and technical sustainability.

At the time of the Mission, however, the fundamental question remains: it is not sufficient that the Mission considers the project well selected and appropriate for the development of the country, while the support of various government institutions is uneven, covering the entire range of positions, from questionable to strong and very strong. The Mission considers that the future would judge its own work very severely if its support for the project would not be total and unequivocal: only schools of excellence such as EEI aims at could help the country to put breaks to the rapidly widening technological gap between itself and the rest of the world.

3.3.3 More detailed comments on the project continuation and particularly on the project document for the fullfledged operations (Phase II) will be presented in the final Mission Report. The Mission has had an opportunity to study in detail the project and wishes to offer a word of caution: the EEI project as it now stands is not without technical and managerial complexity, and in the form presented in the new project document and in the ADF Appraisal Report, strongly suggests even greater operational complexity in the future. The Mission, however, is of the opinion that the project can be controlled perfectly well if:

3.3.3.1 The number of trainees admitted each year is gradually increased from maximum one hundred to two hundred fifty for the period 1994-1997; and,

3.3.3.2 The instruction specialties are limited to those stated in the project document, namely Electrical Power, Electrical Power Installation, Telecommunications, and Industrial Process & Control. A careful and independent capacity assessment of the EEI should be performed before any new specialty beyond those just mentioned is introduced. It is understood that the industrial process and control program will be financed through the ADF monies. This

furthers the argument that there needs to be a common management of ADF and UNDP Phase II funds. Nonetheless, the Mission wishes to recommend that a priority be placed on the establishment of these 2nd year specialties early into the Phase II timetable. This will allow a first class of graduates within the stated timetable. It is noted that the first year curriculum (HTC) is common, and these four 2nd year specialties are a natural and efficient outgrowth of the EEI core programming.

3.3.3.3 The Mission notes that the ADF fund is also essential to the completion of the 2nd year Electrical Power Technology equipment purchase, in particular, for Fluid Power, Physics, and Industrial Automation training.

3.3.4. The Mission debated at length the institutional arrangements for EEI. All alternatives were considered, including the placement of EEI elsewhere, not to be affected by the financial position of EELPA due to currency devaluations and its increasing operating costs, as it is presently the case. The mission considers that the special relationship between EEI and EELPA is an organic one, based on mutual interest and professional interface. In light of this special relationship, it is important to provide EELPA with the necessary mandate and the budgetary support, at least for the initial period of four years. This action is the responsibility of the government.
With these concerns in mind, the Mission will be recommending that, at the next Tripartite Review Meeting, a thorough internal and critical re-appraisal of the EEI institutional and financial constraints, risks, outputs and expectations be performed, so that all parties will satisfy themselves that the Institute is exactly what they expected to be.

3.3.5. The Mission strongly favors a successful instructional institution of academic excellence, able to serve competently the requirements of the Ethiopian economy and to put it in a leading position on external markets. In the Mission's opinion, the project should be continued as envisioned by the UNIDO formulation Mission of 1990, with sufficient resources and with a better focused and more correctly designed workplan for the coming phase. This continuation can be designed/formalized and approved along the lines of the draft project document, but subject to the following conditions:

3.3.5.1. Project management did a commendable job during Phase I. The NPC and the CTA posts available during the second phase must be filled with personnel with the same level of competence for continuity in job performance and project vision.

3.3.5.2. Already agreed inputs by each of the three parties (government, UNDP and ADF) be made available as soon as possible.

3.3.5.3 Project coordination be established by setting up of the Governing Board at the beginning of Phase II if not earlier.In this case, if the local rules permit, UNDP and UNIDO representatives be allowed to participate in the Board's meetings as observers. This arrangement would facilitate their most effective coordination and monitoring of the project activities. The Mission has considered the membership of the Governing Board and the General Advisory Committee and recommends the following seat modifications:

Governing Board:	Ministry of Mines and Energy Ministry of Transport and Communication Ministry of Industry General Manager-EELPA General Manager-ETA Seat for private sector Seat for private sector
General Advisory Committee:	Ministry of External Economic Cooperation Ministry of Higher Education Ministry of Planning and Economic Dev. Commission on Science and Technology Addis Ababa University UNDP/UNIDO Student representative

3.3.5.4. For the sake of management effectiveness and simplification of operations, the Mission is strongly in favor of merging of UNDP and ADF inputs through building up one single project document in which the ADF Technical Assistance funds (about US$ 4.7mil) are identified as government cost-sharing contribution. This, among others, would eliminate project coordination problems and double accounting which could become cumbersome and confusing and would strengthen considerably the management of the project. Complementing this arrangement with an integrated Workplan incorporating UNDP and ADF funds, would represent a gigantic logical step towards efficiency.

4. FINDINGS ON GENERAL RESULTS OF PROJECT

The considerable delay in recruiting and training trainers, trainees and administrative staff or, briefly, in making the EEI operational, made all the other project outputs unusable, irrespective of their quality and the date of delivery. The classrooms, labs, dorms and cafeteria of the Institute as well as its administrative block are clean, inviting to work but totally empty. Some inside space is taken by electric and electronic equipment, well packed in boxes but devaluating fast. And all this is because of the reasons mentioned in section (2) and (3) above. One cannot overlook the fact that in view of the short life cycle of the electronic equipment, the Institute's main endowment, it is

depreciating at a rate of 15-20 percent per annum. Curricula for High Tech Core and Advanced Specialty Training which directly fulfills the training requirements of the industries concerned have a higher longevity. These are the main outputs of ETH/88/011 which will survive for some time if the project does not resume implementation soon.

4.1 PROJECT IMPLEMENTATION

4.1.1 Workplans, Inputs, Project Management and Inputs

4.1.1.1 The workplans observed by the mission are of limited use. If the project is to continue, this situation must be rectified. Proper barcharts incorporating relative progress data (%), plus the facility to record "planned vis-a-vis actual" are vital. As no quality standards or indicators to measure outputs are used in the project document, no comparison regarding such matters can be made.

4.1.1.2 The reporting from the project is genuine and sufficient. Detail regarding progress in quantitative terms as well as costs is sufficient. There is a concurrent requirement for grater interrogation of these reports by those backstopping the project.

4.1.1.3 Project management is addressing administrative, coordination and technical matters reasonably well. Much greater attention is needed to complete the project activities within a set time-frame. Careful analysis of situations which potentially may lead to waste should be performed. For instance, apart from what has already been said in connection with the increased allocation and purchase of equipment in a climate of uncertainty on the future of the project, the simple fact that double allocation is intended for the CTA post in the UNDP project document and in the ADF credit, 32m/m and 27m/m respectively; the Mission assumes that this is a concurrent assignment, which needs to be rectified.

During the life of the project, in the estimation of the Mission, too many important changes were effected in the project's inputs, such as suppressing the output two and all related activities and expertise, extension of the CTA post by 75% of his originally established assignment, while the total volume of work (outputs) has been diminished globally. It is noted, however, that much has apparently been accomplished in regard to policy and procedure documents and the writing of the ADF grant request.

4.1.1.4. Quality of backstopping

The Mission notes that there has been considerable effort put into getting the ADF credit into shape. There has been one visit from UNIDO Headquarters at the project management level, and ongoing support and interest by government and UNDP. The Mission also noted:

4.1.1.5 One Tripartite Review has been held after one year from the arrival of the CTA, which is in line with the UNDP rules and procedures. The Tripartite took several important decisions:

1. To delete output two as a project goal. This was a questionable decision as it undermines the most important pillar of the EEI, its permanent faculty staff and the technical reliability/long-term sustainability of the institution. Without this staff EEI cannot be expected to become a center of excellence and to be technically sustainable in the short or in the long term as well as to achieve financial self-sufficiency. This decision must be reversed and resources reallocated, assuming that instructors of right caliber will be recruited. It may take longer to train the 20 instructors meeting accreditation standards but their full time employment by EEI is an objective necessity.

2. To almost double the amount of equipment in the project, while the number of trainers and trainees had been reduced dramatically (from 50 to 10 and from 150 to 80 respectively) and during an atmosphere of uncertainty regarding the availability of the operational budget for EEI by government, was again a questionable decision.

3. UNDP rightly questioned the strategy for twinning arrangements but unfortunately the more realistic approach recommended by it was ignored and the opposite solution was adopted by the meeting, leading nowhere and with no guarantees for the future. The full setting up the center looks logically as a prerequisite to any twinning.

4.1.1.6 The PPER and an excellent final report have been prepared by the project management, but the feed-back in the substance to these reports is missing by the parties involved in the program (UNIDO, UNDP, Gov't)

- -no interrogation on the new strategies and the rate of progress any time during the implementation.
- -no initiation or demanding of proper workplans.
- -no field visit reports available.
- -excepting TPR, no written evidence on working contacts between UNDP and UNIDO country personnel with government officials at the required levels for problem solving.

4.2 Factors Promoting or Hindering Project Implementation

The Mission notes that factors promoting the project are as follows:

4.2.1. fifth Country Programme being appropriate, supportive and focused.

4.2.2. all three parties concur on the project priority and necessity.

4.2.3. supportive attitude from the main government agencies concerned. This often leaves the impression that lack of recurrent budget is a conjunctural problem, combined with unnecessary administrative complications rather then lack of political determination.
4.2.4. very positive attitude to the EEI on the part of the National Project Coordinator.
4.2.5. Excellent inputs from the CTA and consultants.
4.2.6. Promotion of the ADF loan meant to strengthen the EEI

The Mission notes that factors inhibiting the project are as follows:
4.2.7. No funding for the running costs of EEI.
4.2.8. No useful workplan and cost plan.
4.2.9. No critical interrogation of progress reports.

5. PROJECT RESULTS

5.1 Rate of achievements and quality of outputs

In the mission opinion, approximately 70% of the overall projected delivery has been achieved. This delivery is of a good quality. However, considering the non recruitment of instructors and of trainees and lack of firm commitment at the policy level in respect of funding of operational expenses of the EEI by the government, the achievements just mentioned can not be used, and therefore they have little intrinsic value.

5.2 Probability of Achieving Immediate Objectives.

Everything depends on decision of the government and its partners. Any delay in this respect is extremely harmful to the project and to that staff who still believe in the EEI goals.

5.3 Significance and Impact of the Project

The Mission notes a significant discouraging impact of the project. The impact on the target group can only be ascertained at the end of the implementation stage, that is after 4-5 years after resuming the project's operations.

5.4 Unintended Effects of the Project

As far as the Mission is aware there has been no unintended effects of the project, other than the long and unexpected delay in operations.

5.5 Sustainability of the project

In general there has been too insufficient achievement to give the Mission opportunity to assess this issue. However, assuming

that the project operations will resume, the following are the minimum measures needed to ensure sustainability:

5.5.1 secure funds in local currency for the recurrent expenditures of EEI for the next two years and obtain firm commitments for additional four years. The preferred source is the government central budget, which could be channelled to the Institute through the Ministry of Mines and Energy.

5.5.2 secure funds in foreign currency at the appropriate level for fellowships and academic contacts of mutual interest with strong educational institution(s) in developed country(ies), in order to ensure long-term technical/pedagogical strength of EEI. These funds are needed only after the end of external assistance.

5.5.3 train no fewer instructors than 75% of the total academic staff necessary to the Institute, in order to recruit as part-time outside staff only those who are at the level of excellence.

5.5.4 establish good academic reputation for EEI in order to attract candidates for training from Africa region as well as from the private sector. The income from these activities will also serve to gradually reduce funding support from the central budget of the government.

6. MAIN PROBLEMS FACED BY PROJECT

It is the opinion of the Mission that no substantive problems were faced by the project which could account for it having only achieved approximately 75% of total outputs. The difference can be achieved in relatively short time and with limited financing, once the budgetary problems of Electrical and Electronic Institute are satisfactorily solved.

7. SUMMARY OF RECOMMENDATIONS

7.1 Efforts to integrate the project's operational budget in the national central budget should continue with particular vigor. Funds availability should be ensured for the first two academic years (1993-1995), and formal commitment should be given by the government for four more years. This should ensure smooth, long-term running of operations and allow the EEI management to concentrate energies on academic and management problems. The central budget should support the EEI until other sources of income should complement the state support and would become gradually sufficient to cover all current expenditures, making the central budgetary support unnecessary. To this effect a detailed strategy should be developed by the Institute with the help of EELPA and the Executing Agency. Action by Government and UNIDO.

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7.2 Efforts to maintain the project into the Fifth Cycle Country Programme should continue. The project's support by UNDP should become firm only after the problem of effective, short and long-term funding of the EEI operational expenses is satisfactorily solved. Action by Government and UNDP.

7.3 No financing in TA, equipment or training for the benefit of the EEI should be made by UNDP before final, favorable and reliable solution is found to the operational budget of EEI. Once this solution exists, and once the trainers (minimum 10) and the trainees (minimum 90) have been recruited, the TA for the second phase of the project ETH/88/011 for fullfledged operations can be approved. Action by Government and UNDP.

7.4 Setting up and formalizing the coordination arrangements for the project. Instituting the EEI Governing Board and General Advisory Committee are the most logical and urgent solutions. The Board's rules and regulations as well as its membership are defined in the Project Document of ETH/88/011 Phase II and revised in this draft report by the Mission. The need for coordination is extremely acute and the Board or any other formal coordination mechanism should be instituted as soon as possible. Action by Government.

7.5 Once resources are available by government and UNDP, the following actions should be implemented in sequential order:

7.5.1 Put on board the NPC and the CTA. Action by Government, UNIDO and UNDP.

7.5.2 Enroll and train instructors on campus and on fellowship. Action by Government and UNIDO.

7.5.3 Enroll incoming first two year generation students to the High Technological Core courses. Action by Government.

7.6 To ensure conditions for long term sustainability, the following actions are to be implemented:

7.6.1 Strive for academic excellence as the base for national, regional and international recognition. Action by government and UNIDO.

7.6.2 Ensure own high quality technical instruction staff. Action by government.

7.6.3 Ensure funds for smooth running of the EEI and stimulate academic contacts with other universities. Establish special relationship (twinning) with 1-2 schools of similar profile and recognized reputation in developed countries.

Action by government and UNIDO.

7.6.4 Enhance professional relationship between Addis Ababa University and EEI, in terms of faculty exchange, instructor training and accreditation, technical seminars, library resources and other similar contacts. Action by government, UNIDO and UNDP.

7.7 The risk analysis of the project should be carefully reviewed to make sure that it is in line with national and international realities. Action by government, UNIDO and UNDP.

7.8 The project management should also be in charge of the management and implementation of the ADF loan. Consequently, one single integrated Workplan should be prepared for both, UNDP and ADF outputs, activities and inputs and distributed to all members of the Governing Board, UNDP, and ADB. The plan should be kept updated as implementation progresses and distributed every two months to be used by the Governing Board members as required. The plan should be provided with quantitative and qualitative indicators and with timelines and responsibilities assigned for inputs and activities. Action by government and UNIDO.

7.9 The potential benefits and services brought by the project to the private sector should be identified and spelled out clearly in the project document. Action by Government and UNIDO.

7.10 The EEI should aim for more reduced intake in order to reach the level of excellence. The increase in trainees for short and long-term training should take place progressively from 100 in 1993 to 250 in the year 2000. Action by government and UNIDO.

7.11 Any new addition in technical specialties at the EEI should be proceeded by capacity assessment studies on techno/economic and academic affordability, opportunity, national interests, alternative solutions and priorities. The principle of achieving academic excellence should prevail in all circumstances. Such studies should be executed by independent consultants. Action by government.

7.12 No other institutional arrangements should be made, but strengthening the existing ones by well prepared meetings of the Governing Board which should be a discussion forum among the interested parties. Action by government and UNIDO.

7.13 The EEI curricula should be reviewed and revised on an on-going basis, with Accreditation guidelines in mind. The

following additional courses should be considered: management, non-conventional energy and environment. Action by government and UNIDO.

(Instead of) ANNEX III

FAX MESSAGE NYC, 29 September '93

TO: Mr. P. Simkin
Resident Representative
UNDP, Addis Ababa
FAX: (251-1) 514-599

INFO: (1) Mr. P. K. Manoranjan
UNIDO Country Director

(2) Ms. Anne Foster
Chief
Division I, RBA-UNDP/HQ

FROM: Damian Lascu
Evaluator, ETH/88/011
Electrical and Electronic Institute
FAX: (212) 758-1894

SUBJECT: JOINT GOVT-UNDP-UNIDO MEETING ON CONCLUSIONS AND RECOMENDATIONS OF EEI EVALUATION MISSION (ADDIS ABABA, 16 SEPTEMBER 1993)

In order to finalize and submit the Mission Report to the UNDP/HQ, I would wery much appreciate receiving by return facsimile the copy of the Minutes of the Meeting mentioned above, for comments (if any) and for inclusion in the Report.

Thank you very much for your understanding and assistance.

NOTE: SINCE NO REPLY WAS RECEIVED IN MORE THAN THREE WEEKS, THE REPORT HAD TO BE FINALIZED WIHOUT ATTACHING THE MINUTES OF THE MISSION DEBRIEFING MEETING HELD WITH THE THREE PARTIES.

ANNEX IV

EVALUATION OF THE
ELECTRICAL & ELECTRONICS INSTITUTE
PROJECT (DP/ETH/88/011)-PHASE I

MISSION SCHEDULE
6th TO 16th SEPTEMBER 1993

Sept. 4

8:00 p.m. .Arrival in Addis Ababa of team leader, D. Lascu

Sept. 6

8:00 a.m .Team leader visits UNDP/RR office in Ethiopia.

8:30 a.m .Evaluation Team leader received by Mr.Chinsman, UNDP Deputy Resident Representative.

9:30 a.m .Team leader discussion with Dr.P.Manoranjan, UNIDO Resident Representative.

11 a.m .Discussion between the Evaluation team leader and the NPC.

11.a.m .Team member representing UNIDO arrived in Addis Abeba.

Sept. 7

9 a.m .Briefing of the Mission by Dr. P. Manoranjan, UNIDO Country Director.

10:30 a.m .Mission visit of the EEI project site.

2-6 p.m .Discussion with the NPC on the terms of reference and objectives of the Mission. Review list of appointments. Organization of work.

Sept. 8

9 a.m .Discussion with mr. Amdesellassie, Project Management Office/Ministry of Education.

10:30-1 p.m .Team discussion on the content of the Evaluation Report Draft.

Sept. 9

9 a.m .Discussion with Mr. Mengistu Teferra, Head of the Energy desk at the Ministry of Planning & Economic Development.

10:30-12:30 .Team discussion of EEI project Phase I outputs.

2-2:30 p.m .Discussion with Mr. Kebede Tiku, Head of the UN desk at the Ministry for External Economic Cooperation.

4- 6 p.m .Team discussion on EEI project Phase I outputs

Sept. 10

9 a.m	.Discussion with Dr. Almayehu, Higher Education Department/Ministry of Education.
10-11:30 a.m	.Discussion with Mr. Fantahun Akalu, Vice Minister, Ministry of Mines & Energy.
2-6 p.m	.Team discussion on EEI project Phase I outputs and conditions for Phase II implementation.

Sept. 13

9 a.m	.Discussion with Mr. Peter L. Simikin, UN Resident Co-ordinator and Resident Representative of UNDP.
13:30-12:30	.Team discussion on content of Evaluation Report (draft). Preparation of the Report.

Sept. 14

9-12:30	.Team discussion on Evaluation Report draft. .Several unsuccessful attempts made to obtain appointments with management of EELPA and ETA.
2:30-5 p.m	.Visit of the Ethiopian Airlines Training Center and the Ethiopian Telecommunications Training Center.

Sept. 15

9 a.m-1 p.m	.Preparation of final draft of Evaluation Report at the EEI.
3 p.m	.Discussion with Dr. Peter Manoranjan, UNIDO Country Director.

Sept. 16

10 a.m	.Round table with officials concerned on the Evaluation Mission Draft Report.

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters 3			4			1992 Quarters 1			2			3			4			1993 Quarters 1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
OUTPUT 1.0																											
• CURRICULA DEVELOPED, BOTH HIGH TECH CORE & ADVANCED SPECIALTY																											
Activities																											
1.1. Recruitment and appointment of international advisors.																											
1.1.1. CTA/Electrical Curr. Dev.																											
1.1.2. Electronics Curr. Dev																											
1.2. Development of High Tech Core.																											
1.3. Development of advanced electrical curriculum.																											
1.4. Development of advanced electronics curriculum.																											
1.5. Develop Industry Prog. Advisory Comm. Guidelines & organize the comm.																											
1.6. Maintain Industry Prog. Advis. Comm.																											
1.7. Select and train curriculum development counterparts.																											
1.8. Train curr. dev. counterparts in curr. comm. organization and operation.																											

Annex V

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters 3			4			1992 Quarters 1			2			3			4			1993 Quarters 1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
OUTPUT 2.0																											
TRAIN/UPGRADE INSTRUCTORS FOR EEI																											
Activities																											
2.1. Establish basic qualifications and selection criteria for EEI teaching staff.					—																						
2.2. Recruit and appoint teaching staff.						—	—	—	—	—	—	—	—	—	—	—	—	—									
2.3. Recruitment & appointment of international advisor & counterpart.				—	—	—	—	—	—	—	—	—	—	—	—	—	—	—									
2.4. Assess existing curriculum and equipment for training trainers and assess the trainers current expertise.												—															
2.5. Prepare instructor guides and handouts.												—	—	—	—	—	—	—									
2.6. Develop instructor training programs.												—															
2.7. Conduct instructor training programs.													—	—	—	—	—	—									

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters 3			4			1992 Quarters 1			2			3			4			1993 Quarters 1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
2.8. Finalize an evaluation strategy for determination of trainer effectiveness.														—													
2.9. Prepare a training of trainers equipment inventory													—														
2.10. Set up a trainer's reference library.												—	—	—													

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project Nº DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters 3			4			1992 Quarters 1			2			3			4			1993 Quarters 1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
OUTPUT 3.0																											
• EQUIPMENT FOR THE DEPT IDENTIFIED AND FINALIZED (FOR 2nd YR)																											
• EQUIPMENT FOR TRAINING OF TRAINERS AND HIGH TECH CORE PROGRAM INSTALLED AND OPERATIONAL																											
Activities																											
3.1. Select and requisition appropriate administrative support equipment.																											
3.2. Select and requisition appropriate equipment for High Tech Core prog.																											
3.3. Identify and finalize equipment list for 2nd yr. advanced training.																											
3.4. Procure High Tech Core equip.																											
3.5. Receive, install, secure, commission, inventory High Tech Core equipment.																											
3.6. Select and requisition equip. for training of trainers.																											
3.7. Procure equip. for training of trainers and administrative support equipment.																											

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters						1992 Quarters												1993 Quarters								
	3			4			1			2			3			4			1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
OUTPUT 4.0																											
ADMINISTRATIVE STAFF TRAINED																											
ON THE JOB TRAINING OF ADMINISTRATIVE STAFF																											
Activities																											
4.1. Appointment of staff.																											
4.2. Assessment of training needs.																											
4.3. Training strategy determined.																											
4.4. Training implemented.																											
4.5. Review and assess various accreditation agency standards, University/ Technical College standards and industry needs to determine EEI standard in staffing, academics and institutional management and operations.																											

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters 3			4			1992 Quarters 1			2			3			4			1993 Quarters 1			2			3			4
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	
3.8. Receive, install, secure, commission, inventory equip for training of trainers & administrative support.																												
3.9. Develop laboratory floor plans for High Tech Core labs.																												
3.10. Prepare laboratories for 1st yr. equipment installation.																												
3.11. Develop laboratory floor plans for 2nd yr. laboratories.																												
3.12. Prepare laboratories for equipment installation.																												

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters 3			4			1992 Quarters 1			2			3			4			1993 Quarters 1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
OUTPUT 5.0																											
FIRST BATCH TRAINEES ADMITTED AND INSTRUCTION INCLUDING LABORATORY WORK CARRIED OUT FOR THE FIRST YEAR ELECTRICAL POWER AND TELECOMMUNICATIONS PROGRAM																											
Activities																											
5.1. Develop admission criteria for entering freshmen.																											
5.2. Admit first year trainees.																											
5.3. Conduct instruction including laboratory work for first year Electrical Power and Electronics Telecommunications Program.																											
5.4. Develop a comprehensive program evaluation strategy, designed for replication, following review of current practice.																											
5.5. Evaluate High Tech Core according to the strategy design.																											
5.6. Following analysis of the results include observations and recommendations for improvement in Phase I Final Report.																											

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project Nº DP/THA/88/011

Description of Outputs & Activities	1991 Quarters			1992 Quarters									1993 Quarters								
	3			4			1			2			3			4			1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
OUTPUT 6.0																											
• TWO OVERSEAS INSTITUTIONS IDENTIFIED FOR A "TWINNING ARRANGEMENT," DESIGNED FOR LONG-TERM SUSTAINED TRAINING OPPORTUNITIES.																											
• FELLOWSHIP TRAINING CARRIED OUT																											
Activities																											
6.1. Identify appropriate institutions suitable for the twinning arrangement.																											
6.2. Plan and prepare a study tour for key EEI/ministry officials that will lead to a Memorandum of Understanding with the twinning universities/technical colleges and which will provide professional development opportunities for the officials as well.																											
6.3. Conduct study tour.																											
6.4. Prepare a work-plan to implement the arrangement during Phase II and which will indicate after project arrangements & relationships																											
6.5. Develop guidelines for fellow selection & appoint																											

WORK PLAN

Project title: Establishment of an Electrical & Electronics Institute/Phase I

Project N° DP/ETH/88/011

Description of Outputs & Activities	1991 Quarters				1992 Quarters								1993 Quarters							
	3			4	1			2			3			4			1			2			3		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
6.6. Select the institution(s) for training first batch of fellows & arrange for study.																											
6.7. Conduct orientation sessions for all fellows before departure including: cultural adjustment personal conduct, study expectations record keeping and academic expectations.																											
6.8. Carry out fellowship training in the areas of voc. training, curriculum, development, training of trainers, trade testing & identification, in-plant training, etc.																											
6.9. Debrief fellows upon return & collect reports. Analyze reports and include results in Phase I Final Report.																											

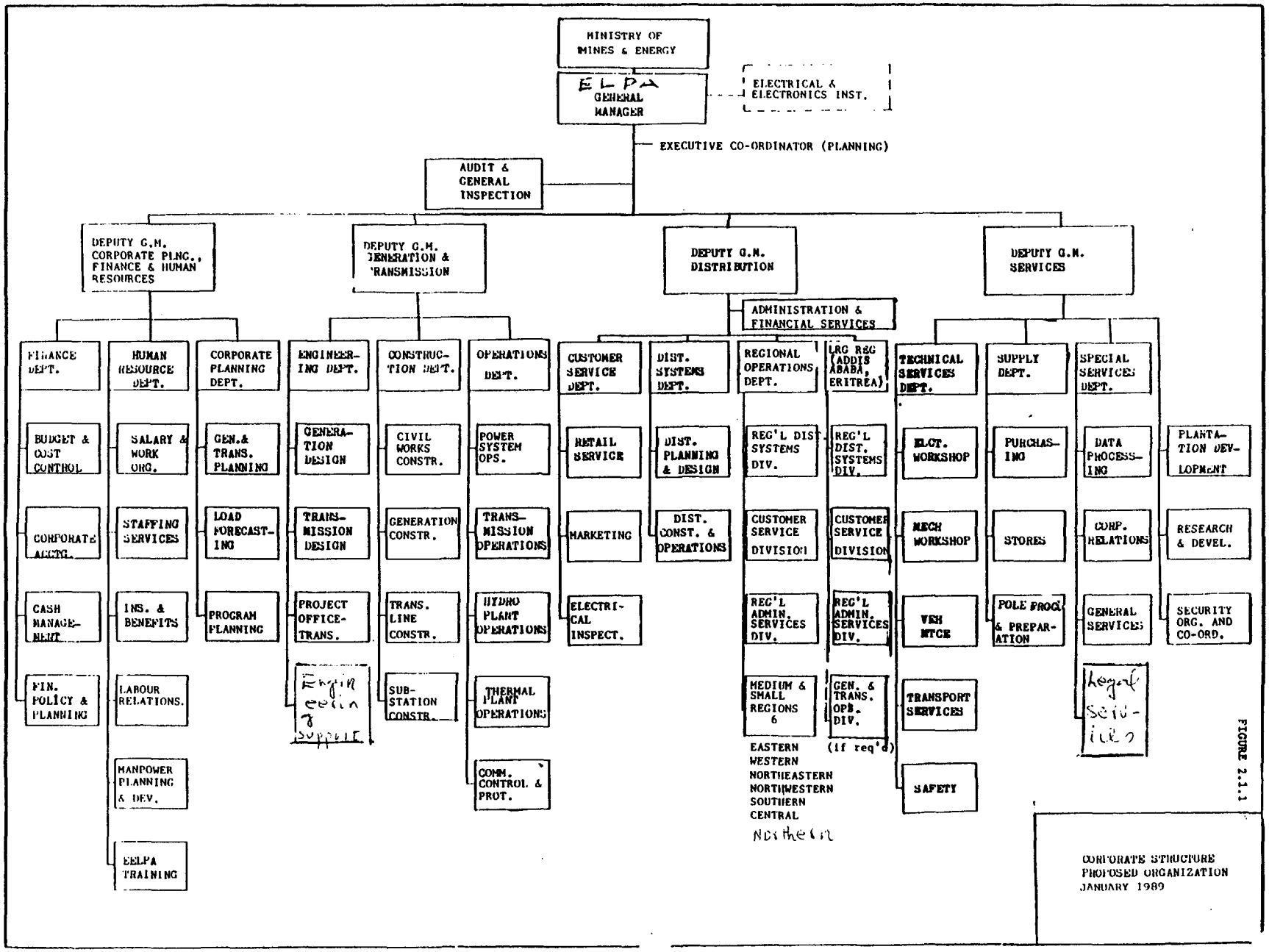

FIGURE 2.1.1

CORPORATE STRUCTURE
PROPOSED ORGANIZATION
JANUARY 1989

Annex VI

ANNEX VII

UNDP/UNIDO Project ETH/88/011
Electrical and Electronic Institute.
Evolution of the UNDP Budget

Date:	90/05/07	90/09/05	91/11/07	92/02/27	92/02/27	93/07/05
Budget lines:	A	B	C	D	E	F
11-01			93.3	93.5	93.5	225.5
11-02			93.3	93.5	93.5	70.6
11-03			69.9	69.9	69.9	
11-50	20.0	20.0	20.0	20.0	20.0	19.9
11-99			276.5	276.5	275.5	316.0
13-00						3.0
15-00	2.5	2.5	3.5	3.5	3.5	5.4
16-00			3.0	3.0	3.0	10.3
16-99						10.3
19-99	22.5	2.5	283.0	283.0	283.0	334.7
31-00			156.0	156.0	156.0	121.3
32-00			10.0	10.0	10.0	
39-00			166.0	166.0	166.0	121.3
41-00			14.0	14.0	14.0	18.1
41-99						18.1
42-00			200.0	200.0	200.0	438.9
49-00			214.0	214.0	214.0	457.0
51-00	7.5	7.5	15.0	15.0	15.0	8.0
51-40						
51-99	7.5	7.5	15.0	15.0	15.0	8.0
59-99	7.5	7.5	15.0	15.0	15.0	8.0
99-99	30.0	30.5	678.0	678.0	678.0	921.0

Annex VI

09/15/93

ETHIOPIAN ELECTRIC LIGHT AND POWER AUTHORITY
ELECTRICAL AND ELECTRONICS INSTITUTE

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
Purchase Order: 15-2-0565y			
1	Two outlets power strip	2 PC	56.83
2	Stereo Cassette Rec/Player	1	241.54
3	TV Carts	3	496.90
4	Cassette Recorder/Player	5	141.51
5	Opaque Projecter	1 PC	1050.00
6	Color Slide Films	18	133.42
7	Spare Lamp for above	1 PC	40.69
8	Audio Cassette Tapes	200	202.16
9	Overhead Projecter Table	2	322.91
10	AC Adapter for above	1 PC	38.75
11	Freight charge for 15-2-0565y		884.37
		Sub total	3609.08
Purchase Order: 15-2-0613y			
12	Video Camera	1 PC	921.56
13	Battery Charger	1 PC	65.61
14	Slide Projector	1 PC	695.14
15	Wall Screen	5 PC	468.85
16	Video Cable Set	1 PC	6.46
17	RF Converter	1 PC	25.96
18	Rechargeable Video Light	1 PC	64.58
19	SC-B MARKER	9 Box	89.51
20	Easel W/Caster	4 Set	271.24
21	8mm Head Cleaning Tape	1 PC	12.14
22	TV 14"	3 PC	1644.86
23	Hard Carrying Case	1 PC	82.66
24	Cassette Recorder	1 PC	571.79
25	Dry Mrker/Green Chalk Board	4 PC	942.87
26	Circular Slide Tray	10 PC	173.08
27	Spare Halogen Lamp	3 PC	19.37
28	Fluid-Head Tripod	1 PC	173.33
29	Soft Carrying Case	1 PC	25.83
30	Video Tape	50 PC	167.91
31	SC-F MARKER	9 Box	89.51
32	Freight charge for 15-2-0613y		1977.92
		Sub total	8490.18
Purchase Order: 15-2-0564y			
33	PC Gateway 2000 85mb	2 PC	5740.00
34	Logestic Mouse Man	3 PC	255.00
35	IBM OS/2 STANDARED V.3.1	3 PC	375.00
36	Laser Jet III + Paper tray	1 PC	1180.00
37	Laser Jet IIIP	1 PC	150.00
38	PC Gateway 2000 340mb	1 PC	3499.00
39	Envelop Tray for Laserjet III	1 PC	80.00
40	Freight charge for 15-2-0564y		0.00
		Sub total	11279.00

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
Purchase Order: 15-2-4038R			
41	Engineering Approch to Di. De	1 PC	55.09
42	Electronics Circuit Analysis	1 PC	39.08
43	Electronic Circuits Discrete	1 PC	40.35
44	Introduction to Solid State	1 PC	80.91
45	Application of Op. Amplifiers	1 PC	117.14
46	Analysis & Design of In. Ci.	1 PC	37.96
47	Electronics Circuit An. & De.	1 PC	73.31
48	OPerational Amplifiers	1 PC	29.71
49	Information Theory & Re. Com	1 PC	106.72
50	Digital Signal processing	1 PC	55.09
51	Analysis & Design of ...	1 PC	36.09
52	Nilsson: Electric Circuits	1 PC	44.75
53	Engineering Circuit Analysis	1 PC	40.35
54	Error Correcting Codes	1 PC	87.13
55	Introduction to Comm. System	1 PC	38.94
56	Principles of Digital Comm.	1 PC	40.35
57	Integrated Operational Ampl.	1 PC	33.97
58	Digital Integrated Electroni.	1 PC	36.09
59	Modern Digital & Analog Com.	1 PC	36.09
60	Millman, J: Integrated Elect.	1 Pc	31.83
61	Electronic Communications	1 PC	47.96
62	Freight charge for 15-2-4038R		0.00
		Sub total	1108.91
Purchase Order: 15-2-0594y			
63	2225 Oscilloscope	9 PC	13050.00
64	070-6299--00 Service Manual.	1 PC	179.00
65	CFG250 Option AL 220v Version	9 PC	0.00
66	CPS250 Option A1 220v Version	18 PC	0.00
67	CFG250 Function Generator.	9 PC	3978.00
68	2225 Option A1 220v Version.	9 PC	0.00
69	CPS250 Power Supply	18 PC	9702.00
70	2225 Option 23 Add. Two p6119	9 PC	1638.00
71	Freight charge for 15-2-0594y		0.00
		Sub total	28547.00
Purchase Order: 15-2-0587y			
72	Armchairs (Ergonomic)	10	1600.00
73	Item 92/16 Instructors Desks	10	5538.46
74	Tablet Armchairs	200	12307.69
75	Item 92/14 Workshop stool	22	1455.38
76	Freight charge for 15-2-0587y		5950.54
		Sub total	26852.07
Purchase Order: 15-2-0701y			
77	91000 F.A.C.E.T. System	3	27315.00
78	Series of Instructor's Guide	5	1040.00

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
79	Series of Student Manuals	10	2420.00
80	Freight charge for 15-2-0701y		1361.22
		Sub total	32136.22
Purchase Order: 15-2-0612y			
81	Flip Chart Easel	3 PC	389.38
82	White Board	24 PC	4637.17
83	A4 White paper	500 Re	1548.67
84	Flip Chart Paper	12 PC	60.18
85	Slide Viewer	1 PC	45.72
86	Ditto,Broad	25 PK	44.25
87	Dust Cover	4 PC	17.70
88	Spare Lamps	5 PC	13.27
89	Oh-Markers Permanent,Fine	25 PK	44.25
90	Projecter Lamp	5 PC	81.12
91	OH-Projecter Videohead Focus	4 PC	1651.92
92	OH-Markers Water-Sol.Fine	25 PK	44.25
93	A4 Yellow Paper	50	258.11
94	Write-on OH-Film	5 Box	43.51
95	Slide Mounts	5 Box	70.06
96	Slide Marking Pen	4 Bx	9.73
97	Ditto,Broad	25 PK	44.25
98	Freight charge for 15-2-0612y		7856.19
		Sub total	16859.73
Purchase Order: 15-2-1005y			
99	3.5" DSHD 2.0 MB	10 Box	106.25
100	Toner for Laser Jet III	10 PC	906.25
101	Toner for Laser Jet IIIP	10 PC	749.25
102	5.25" DSHD 1.2 MB	4 Box	22.25
103	Freight charge for 15-2-1005y		596.00
		Sub total	2380.00
Purchase Order: 15-2-0588y			
104	15W Soldering Iron 240v	24	355.57
105	Resin C.Solder 60/40 .028"	25	400.00
106	Set pliers 7" H Duty Comb	50 Set	765.38
107	5/64 (2.4mm) Screwdriver	5	11.38
108	Desoldering Bulbs	5	49.62
109	1/32"(1.0mm) Straight C. Tips	5	11.38
110	1/32"(.07mm) Single Flat Tips	5	11.38
111	Elec.Cont.Mini-Solder Station	5	1201.69
112	Machine screw Assortment	2 Set	52.24
113	Resin C.Solder 60/40 .064"	25	350.00
114	Solderless Banana Plugs Black	250	276.92
115	Nutdriver Set color coded h..	45	1419.23
116	1/16" C.Plated Tips Conical	200	390.77
117	Aligator clips	100	178.46
118	Resin C.Solder 50/50 .064"	25	325.00

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
119	Free standing steel book case	2	504.62
120	1/8"C.Plated Tips Screwdriver	200	390.77
121	1/16" (1.0mm) Screwdriver Tip	5	11.38
122	Coiled Soldering Stands	24	210.83
123	1/8" C.Plated Tips Conical	200	390.77
124	1/16"C.Plated Tip.Screwdriver	200	390.77
125	Screwdriver set philips	45	146.08
126	Nutdriver set metric 4-14mm	45	2085.23
127	Clip on heat sinks	50	89.23
128	Screwdriver set flared round	45	294.23
129	Storage Cabinate	4	1680.00
130	Test lead wire Red 7.6 Mtr Ro	10 Rol	75.85
131	Circuit Board Holder Tray	4	300.00
132	Safety Glasses and cleaning	2 Set	630.95
133	3/8"(10mm) Elec-Hand drill	4	206.71
134	Posts Multi-Purpose Black	100	61.54
135	Solderless Banana Plugs Red	250	226.92
136	Workbenches	5	4746.15
137	Screwdriver Bits 1/32"-3/8"	4 Set	23.82
138	Coping saw 6 1/2" throat	4	7.45
139	Posts Multi-Purpose Red	100	61.54
140	1/64"(.60mm) Micro Tips	5	11.38
141	Adjestable Hacksaw Nickel	6	33.97
142	Soldering Aid Kit	10	160.00
143	Pedestal Base Units	22	8021.54
144	Desoldering Bulbs	25	94.62
145	Spare coping saw blades	20	3.08
146	Test lead wire black.	10 Rol	75.85
147	Resin C.Solder 50/50 .093"	25	325.00
148	Speed wire striper .25 to 6mm	10	156.00
149	Hacksaw Blades 12*1/2*24T	50	30.05
150	Freight charge for 15-2-0588y		6203.13
		Sub total	33448.48

Purchase Order: 15-3-0295y

151	Multimeter, Yellow	13	2187.38
152	Multimeter,Grey	13	2187.38
154	Freight charge for 15-3-0295y		172.14
		Sub total	4546.90

Purchase Order: 15-3-0312y

155	Computer Aided Instr Software	1	5200.00
156	Training System Hardware	2	2054.00
157	Electronic Circuits Hardware	8	6600.00
158	Student textbooks	20	720.00
159	Student Laboratory Manuals	160	3440.00
160	Audio/Visual Aids(Pal/Ntsc)	1	3575.00
161	EVV-3401, Microprocessor VT	1	1900.00
162	Instructer Guides & testing	5	230.00
163	Training System Hardware	13	24115.00

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
164	Instructor Guides and Testing	10	125.00
165	Student text Books	160	4800.00
166	Instructor Guides and Testing	4	52.00
167	Student laboratory Manuals	20	390.00
168	DC/AC Theory&Circuts Hardware	8	10800.00
169	Student Lab Manual	80	5280.00
170	Digital Electronics Hardware	8	6080.00
171	Student Textbook	80	8640.00
172	Freight charge for 15-3-0312y		8700.00
		Sub total	92701.00

Purchase Order: 15-3-0330y

173	SECURITY KITS	25	1593.75
174	Dust Cover for Printers	21	234.99
175	Dust Cover for Epson LX-850	6	67.14
176	MICROSOFT QUICK BASIC V 4.5	1	70.00
177	COMPUTER IBM PS/1 MODEL111	21	25200.00
178	MS LEARNING DOS 3.0	2	20.00
179	Dust Cover for Keyboard	21	129.99
180	CUT SHEET FEEDER for above	6	375.00
181	Connection Cable - 2mts Leng.	10	87.50
182	3 DRAWER MEDIA FILE	10	500.00
183	ALDUS PAGEMAKER 4.0 FOR WIDOW	2	1156.26
184	Power Extension Cable -2mts	48	450.24
185	MINUTEMAN GSP10-G	25	1875.00
186	DBASE IV 1.1	1	610.00
187	Cnnection Cable 4mts Length	11	137.50
188	LOTUS SYMPHONY 3.0	2	1145.00
189	Dust Cover for Laser Printer	2	24.88
190	LOTUS 1-2-3 3.1	2	927.50
191	EPSON LX-850 PRINTER	6	1612.50
192	3.5" DSHD FLOPPY DISKETTES	30	390.00
193	COPY HINGE	1	10.00
194	Dust Cover for 14" Monitor	21	208.74
195	XTREE GOLD 2.5	2	230.00
196	5.25" DSHD FLOPPY DISKETTES	5	46.90
197	Ribbons for LX-850 Printer	100	407.00
198	A/4 size Perf.Computer Paper	12	360.00
199	MS WINDOWS 3.1	2	206.62
200	MICRORIM: RBASE 3.1	1	518.75
201	CROSSTALK XVI 3.8	2	261.26
202	BORLAND TURBO C++	1	80.25
203	MINUTEMAN GS/800 UPS	2	1097.50
204	SIDEKICK 2.0	2	138.24
205	LOGITECH SCANMAN 256	1	378.75
206	ANTI-GLARE SCREEN	1	7825.00
207	WORDPERFECT	2	637.50
208	SIDE WAYS 3.3	2	141.76
209	LOTUS FREE LANCE + V.4.0	1	358.00
210	LOTUS GRAPH WRITER II	1	380.00
211	HARVARD PROJECT MANAGER 3.0	1	495.00

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
212	INTERNAL MODEM	2	85.00
213	Freight charge for 15-3-0330y		6266.00
		Sub total	56739.52
Purchase Order: 15-3-0259y			
214	Oscilloscope	8	10528.00
215	CPS250 Three Output PS	8	2314.00
216	CFG250 Function Generator	3	711.75
217	Freight charge for 15-3-0259y		1130.31
		Sub total	14684.06
Purchase Order: 15-3-0529y			
218	Coppier	1	16207.65
219	Freight charge for 15-3-0529y		1240.68
		Sub total	17448.33
Purchase Order: 15-3-0622y			
220	Markboard cleaner	20 bot	82.68
221	Fresh Moist Towelette	20 can	80.00
222	Slide Wallet W/Metal	5 box	181.52
223	Vertical plastic sign	1 PC	12.92
224	Horizontal plastic sign(No S)	20 PC	258.40
225	Horizontal plastic sign(exit)	10 PC	77.50
226	Horizontal plastic sign(men)	20 PC	103.36
227	Horizontal plastic sign (wo)	20 PC	129.20
		Sub total	925.58
Purchase Order: 15-3-0621y			
228	Mouse Pad Soft 6mm.	4 PC	10.34
229	Heavy-Duty Stapler	1 PC	33.20
230	Staples #1208 8mm.	10 Box	10.10
231	Staples #1210 10mm.	10 Box	13.40
232	Staples #1213 13mm.	10 Box	14.90
233	Elba Heavy-Duty Puncher	1 PC	39.60
234	3-Ring Binders 1-1/2"	2 dozs	52.32
235	3-Ring Binders 2"	2 dozs	58.20
236	3-Ring Binders 3"	1 dozs	72.67
237	Scientific Calculator	5 unit	228.04
238	Canon Model P52-DR 12 di. cal	2 Unit	100.00
239	Ac adaptor for canon	2 PC	18.30
240	Ink roller for canon	12 Pcs	60.00
241	Paper for cannon	12 rol	7.29
242	Paper trimmer with wooden Bas	1 Unit	77.51
243	Vacuum Cleaner	1 Unit	172.22
244	Freight charge		426.26
		Sub total	1394.35

NUMBER	EQUIPDESC	QUANTITY	TOTALCOST
Purchase Order: 15-3-4052 r			
245	Zimmer college english	20 cop	1235.29
246	Workbook for college english	5 cop	133.33
247	Freight		142.22
248	Manual to Applied Physics	20 cop	1078.40
249	Freight		239.95
		Sub total	2829.19
Purchase Order: 15-3-0612y			
250	Language Master in. earphones	25	4134.46
251	Adapters	25	403.85
252	Freight		343.96
		Sub total	4882.27
Purchase Order: 15-3-0268y			
257	Pedestal base units	21	0.00
261	Free standing steel book case	3	0.00
262	Storage cabinates	3	0.00
263	Computer Laboratory Tables	20	0.00
265	Computer Lab chair	22	0.00
266	Total Price for 15-3-0268y		3535.40
		Sub total	3535.40
Purchase Order: 15-3-4052y			
267	College English	20	1235.44
268	Coll. English Stu. work book	5	133.32
269	Freight chjarge		142.27
		Sub total	1511.03
		Grand Total	365908.30

FEBRUARY, 1985

GOVERNING BOARD

GENERAL ADVISORY COUNCIL

DIRECTOR EEI

DEAN ACADEMIC AFFAIRS/ DEAN OF INSTITUTE

PROGRAM ADVISORY COMMITTEES

ELECTRICAL POWER TECH

TELECOMMUNICATIONS TECH

ELECTRICAL POWER INSTALLATION TECH

INDUSTRIAL PROCESSING & CONTROL TECH

COMPUTER REPAIR TECH

COMPUTER MIS TECH

ELECTRO-MECHANICAL REPAIR TECH

ELECTRONICS TECH

REFRIGERATION & AIR CONDITIONING TECH

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MINING TECH

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- STUDENT ADMINISTRATIVE SERVICES/ACTIVITIES
  - P.E / INTRAMURALS / SPORTS / CLUBS/& ORGANIZATIONS
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- STUDENT LIFE SERVICES
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  - HEALTH SERVICE
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DEAN ADMINISTRATIVE SUPPORT SERVICES

- BUILDINGS GROUNDS
  - CUSTODIAL
  - MAINTENANCE
  - GROUNDS
  - SECURITY
  - RECEIVABLES INVENTORY
  - VEHICLES
  - SAFETY
- BUSINESS OPERATIONS
  - ACCOUNTS PAYABLE RECEIVABLE / & BILLING
  - PAYROLL
  - BOOKSTORE
- MANAGEMENT INFORMATION SYSTEMS
  - OPERATORS / PROGRAMMERS / SYSTEMS ANALYSTS
- LEARNING RESOURSES/ LIBRARY
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  - STUDENT COMPUTER SERVICES
  - LIBRARY
  - MEDIA CENTER
- TRAINING/ PROFESSIONAL DEVELOPMENT
  - STAFF ASSESSMENT
  - IN-SERVICE TEACHING
  - TECHNOLOGY AND STRATEGY CENTER
- PROMOTION PUBLISHING
  - DESIGN & LAYOUT / EDITING
  - PRODUCTION
  - PROMOTION

ANNEX IX

Annex

MINUTES

A Technical Review meeting to discuss UNIDO Project, DP/Eth/88/01, Phase I, was held 30/Oct/91 at EELPA. Those present were:

Mr. Manoranjan, Country Coordinator, UNIDO.
Mr. Tamene, General Manager, EELPA.
Dr. Eckhardt, Senior Advisor, UNIDO.
Mr. Ayele, National Project Director/EEI Director.
Mr. Tamesgen, Ethiopia Telecommunications Institute Director.

UNDP.

Tamene Wolde Yoh
General Manager

The purpose for this meeting was to discuss the project's work plan as prepared by the Senior Advisor, National Project Director/EEI Director and the ETI Director. During the discussion many relevant points were made by all those in attendance. Points of concern were discussed and agreement accomplished. Other points were brought out as precautionary suggestions and still others were raised relative to administrative detail.

I. PROJECT DURATION

Following a lengthy discussion on the project outputs and activities, and their relationship to the phasing of the various activities and their scheduled execution, it was noted that three outputs could not be realized within the 18 months designated for project duration, specifically:

- On-the-job-training for administrative staff carried out;
- 1st Year High Tech Core instruction carried out; and
- Fellowship training abroad for instructors carried out.

Moreover a continuous UNIDO advisory involvement during the entire Phase I of the project was deemed desirable. It was agreed therefore to extend the project duration to 21 months.

II. SIGNIFICANT POINTS RELATIVE TO THE WORK PLAN

Output # 1 Curriculum Development

It was agreed that the Senior Advisor/Expert for Electrical Power Technology Curriculum Development and Instruction should assume the responsibility for development of the High Tech Core curriculum, which is common to both electrical and electronics curricula, and the equipment identification and purchase. Therefore, the Expert for Telecommunications Technology will be responsible only for development of the 2nd year curriculum for electronics and equipment identification. Accordingly, it was recommended to reduce the latter's appointment duration from 12 mm to 8 mm.

The importance of the Program Advisory Committees in ensuring for relevancy in matching curriculum with on-the-job task performance was stressed. It was reported that the development of the Program Advisory Committee Handbook is already in progress.

Respective to curriculum relevancy and the potential for the curriculum to become absolete, it was noted that activity 1.8, the training of counterparts in curriculum committee organization and operation, will enable the institute to perform ongoing self-evaluation and upgrade of the curriculum.

Output # 2 & Output # 6 Training of Instructors on-site & Abroad

It was noted that we desire an institute of international calibre, one that has programming

of the highest quality. It was felt that adequate training of the instructional staff will give us that assurance. It was reported that we will make every attempt to select the best prepared instructors for EEI including 3 years of industrial experience and a Bachelor's degree - preferably the EE degree. We will try to develop, through the training programs, a cadre of instructors consisting of at least 50 % MEE. This will meet most accrediting agency standards.

It was agreed that in the Phase I of the project we will focus on the delivery of 2 training sessions to be attended by the instructors selected to teach the High Tech Core Courses. Because of the fewer instructors to be trained in teaching methodology and clearer focus on the workshop's content it was proposed to reduce the duration of appointment for the Expert in Instructor Training from 9 mm to 3 mm for Phase I. The balance of the on-site training for full-time and part-time instructors will be made available during Phase II of the project.

It was also agreed that the Fellowships scheduled for Sept. 1992 through June 1993 will be finalized before the end of Phase I. At this time the government has determined that the greatest need for the Institute would be to obtain Masters degrees for the instructors.

Output 6 also requires the establishment of a "twinning", arrangement with two institutions. The project document indicates that a work plan will be developed during Phase I and the arrangement implemented during Phase II. This part of the plan gives us sufficient time to develop a potential "twinning list" through correspondence and then to

Strategy/ WP in Phase I implem Later

communicate with the other institution officials to the degree necessary before potential realistic twinning arrangements can be determined. We believe the study tour scheduled for the EEI/ ministry officials is strategically timed to allow our officials to engage in substantive on-site discussions with the twin institutions during the scheduled study tour. We anticipate that shortly after the tour we will be able to finalize memoranda of understanding which will outline the details of long standing relationships which will begin approx. Seven or more months following the study tour.

Output # 3 Equipment Identified & H.T.C. Operational

Main discussion on this output focused on the need for an early finalization date for purchase requisitions to allow time for ordering, receiving, installing, before H.T.C. and instructor training start-up. A Feb. 1, 1992, deadline seemed reasonable.

Output # 4 Administrative Staff Trained On-the-Job

It was agreed that this training will be conducted to some extent immediately upon appointment of the administrative staff but that there will be an emphasis upon on-the-job training during the offering of the H.T.C. The decision to comply with various accreditation agency standards in staffing, academics and institutional management and operations was well accepted.

Output # 5 First Batch Trainees Admitted and H.T.C. Carried Out

It was agreed that the first batch of trainees

will complete the H.T.C. before the conclusion of Phase I.

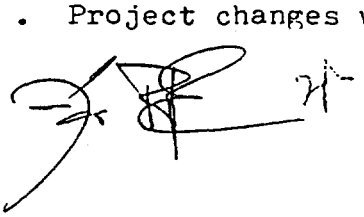
III. OTHER ITEMS OF IMPORTANCE

- It was also agreed that Phase I should be extended to 21 months, begnning Sept. 30, 1991.
- No provision has been made in the project document for a project vehicle. The Government is unable to provide a vehicle particularly in light of the significant number of vehicles lost by EELPA in recent months due to disturbances in the port of Assab. Provision of a vehicle by the project has become a great and urgent need. Therefore it is recommended to include a project vehicle in the equipment to be provided by the project.
- Phase II project document must be finalized 6 months before end of Phase I.
- Schedule of Project Review, Reporting and Evaluation would be established as stated in Annex 11 of the Project Document.

The Possibility of expatriate nationals assignment as instructors in the EEI through UNDP assistance upon request by the government project officials was raised by the UNIDO Country Director. It was agreed that this idea should be pursued.

Copy of discussion handout attached for files

- Project activities spreadsheet
- Revised Work Plan
- Revised Expert's Job Descriptions
- Current Project Budget (10/10/91)
- Project changes with rationale



UNDP PROJECT DOCUMENT: DP/ETH/88/011

ESTABLISHMENT OF ELECTRICAL/ELECTRONICS INSTITUTE PHASE I

Revisions Not Involving Significant Change List

Reference	Change
Cover Page	Project Duration: From 18 months increased to 21 months. Three of the six (50 %) project outputs will not be finalized until the end of the 21st month following project start-up. Twenty-one months allows for: • complete implementation of EEI administrative staff on-the-job training. • monitoring by UNIDO of the entire 1 year High Tech Core training program. • work plan preparation to implement twinning arrangement with overseas institutions. • completion of fellowship training.
pp 10-12	Project Outputs: Output # 2, fifty trained or upgraded instructors reduced to twenty. We anticipate a maximum of 20 instructors needed for the first year High Tech Core program during Phase I. The balance (30) will be trained during Phase II. Project Activities: None deleted. Some new ones added and some clarified as noted in the work plan.
pp 13 (2,3a)	Government Input: Reduce from 50 to 20.
p 14	UNDP Inputs: International Experts 11-01 Increase from 12mm to 21mm. 11-02 Decrease from 12mm to 8mm. 11-03 Decrease from 9mm to 3mm.

pp 20-25 — Annex I/1-I/6 Description of Activities: Revisions are noted as part of the Work Plan attached. Some new activities have been added under each output in the Work Plan to more fully illustrate the activity involvement during the accomplishment of the outputs.

p 31 — Job Description of Advisor/Curriculum Development in Electronics/Telecommunication: Duration of Appointment: 12 mm to 8 mm. As noted below under description of duties, this Expert's duties involve substantive curriculum development work in electromies/ and Telecommunication and are focused primarily on preparatory work for Phase II. The High Tech Core Program would be handled by the Expert in Electrical Power Curriculum Development.

p 31 — Scheduled Starting Date: 1 January 1992

p 31-32 — Description of Duties:

a) Add the following to a) for sake of clarification: "Following an assessment of current equipment availability prepare purchase requisitions that will include the laboratory equipment, hand tools, expendable materials & laboratory furniture for the Phase II advanced training. Furthermore, the Expert will develop floor plans for equipment layout and utilities and a comprehensive bidder's list."

b) Delete. This task will be accomplished by the Expert Electrical Power Curriculum Development and Instruction.

g) Delete. This is unnecessary during Phase I as a result of revision to the Instructor Trainer's job description.

p 33 Job Description of Expert in Instructor Training Duration of Appointment:
From 9 mm reduced to 3 mm.

As a result of the reduction in number of teachers to be trained (50 to 20) and as this type of training focuses mainly on training methodology and teaching techniques, it is necessary to reduce the length of the assignment during Phase I.

p 33 Scheduled Starting Date: 1 June 1991

p 33-34 Description of Duties:

c) Rewrite for a clearer focus:
"Develop a 2-3 week training program, to be repeated, based on the results of the evaluation of training needs. Also, instruct trainers in the use of competency - based curricula prepared by the other Experts."

e) Revise line 3 to read 20 instructors, (20 in Phase I and 30 in Phase II).

Annex XI

DRAFT

AGENDA

I. Progress

1. Progress towards achievement of the project outputs (as per existing project document.

2. Progress towards achievement of the project objectives (as per existing project document).

3. Relevance of the project, as implemented, to the development efforts of the Government (Phase I).

4. Change of environment of the project and significant effects thereof (Phase II).

5. Comments of the Executing Agency.

II. Operational Issues

1. Identification of problems in implementation.
2. Tentative workplan for the above activity.
3. ADB-UNIDO linkage.

III. Decisions and Recommendations

1. Conclusions on the degree of success of the project in producing its outputs and in moving towards achievement of its objectives.

2. Decisions and recommendations in respect of the project.

   2.1 Request for additional funds

   2.2 Approval of Phase II of the project

   2.3 ADB/UNIDO linkage

DRAFT MINUTES OF THE TRIPARTITE REVIEW MEETING FOR PROJECT DP ETH/88/011 - ELECTRICAL AND ELECTRONICS INSTITUTE

The Meeting was held at the Ministry of External Economic Co-operation on 10 November, 1992.

Period Covered: October 1991 which marked the beginning of the project until November 1992.

Participants:

1. Ato Israel Kidane Mariam (Chairman), Vice Minister, MEEC
2. Ato Fantahun Akalu, Vice Minister, Ministry of Mines and Energy
3. Ato Kebede Tiku, Head, UN Desk, MEEC
4. Ato Gashaw Muluneh, MEEC
5. Ato Ayele Lakew, National Project Co-ordinator, Electrical and Electronics Institute
6. Mr. Babashola Chinsman, Deputy Resident Representative, UNDP
7. Mr. Victor Shatravko, Backstopping Officer, UNIDO
8. Mr. Peter Manoranjan, UNIDO Country Director
9. Mr. Rodger Eckhardt, Chief Technical Adviser of Project, UNIDO
10. Ms. Claudia Linke, Junior Professional Officer, UNIDO

I. ADOPTED AGENDA

1. The agenda as adopted in the meeting, is attached.

II DELIBERATIONS

1. The National Project Coordinator gave an account of the progress achieved by the project during the time period given above. He summarized the developments in terms of outputs achieved and problems faced during the past thirteen months.

Output 1: High Technology Core (HTC) and advanced Specialty Training Developed

Curriculum for the High Technology Core (DC/AC Circuits and Theory, Electronics/Digital Circuits, Microprocessors and Computer Applications) has been prepared. Sample textbooks, lab manuals, instructor guide have also been prepared and are now on hand.

The advanced Electronics Telecommunications Technology Curriculum is complete. The advanced Electrical Power Technology Curriculum is under development and will be complete by 28/2/93. Equipment lists for both programs are complete and purchase requisitions will be finalized during the Study Tour scheduled for December 92, while the participants are in attendance at the American Vocational Association Convention. Eight classrooms and eight laboratories for the High Technology Core Programs are

prepared. Three laboratories, five classrooms and five offices will be fully equipped under Phase I. Two laboratories will be equipped under Phase II.

Output 2: 50 trained instructors in training methods

In October 1991 a reduction in the number of instructors to be trained from 50 to 20 was made due to the reassessment of the project's needs for the first year of operation. Later, the project authorities decided that all instructors employed at the EEI should have credentials meeting accreditation standards. Therefore, output 2 has been deleted as a project goal, whereby eliminating the need for an expert in instructor training (B/L 11-03) as reflected in budget revision "E" of the project. The instructors were expected to be employed from the Addis Ababa University, and the recruitment process has been undertaken.

Output 3: Equipment identified and finalized

The equipment is needed for 3 specialty laboratory courses. One lab is almost fully equipped. The last two labs could not be equipped due to lack of funds for equipment purchase. The installation of basic equipment for the labs is considered as training expenditures of study courses abroad foregone. Additional funds required on BL 42-00 will amount to USD 243,000.

Output 4: 3 administrative staff trained

It is expected that the study tour will start in December, 1992.

Output 5: 1st Batch trainees admitted at the EEI

The output is in the process of achievement. Minimum commitment of 80 students (EELPA-50, ETA-30) has already been confirmed. The course was supposed to be started in September 1992. Due to a lack of an EEI operational budget this had to be postponed to the second half of January 1993..

Output 6: 2 overseas institutions identified for a twinning arrangement: Fellowship training carried out

The University of Wisconsin - Stout and Ferris State University have been selected by UNIDO to satisfy EEI's needs in mastering fellows in industrial/vocational education. However, fellows have not been identified. It is expected that a Draft Memorandum of Understanding (MOU), for long-term twinning, will be developed during the study tour scheduled for December, 1992.

In support of the presentation given by the project coordinator the CTA of the project and the backstopping officer added further comments of appreciation and satisfaction in terms of the project achievements and the government involvement and support. The project management expressed their happiness with the progress made by the project and pointed out the great potential for the institute to become a regional centre, attracting international students.

UNDP gave initial comments on the preparation of the PPER. It was pointed out that the language of the document should be neutral, the PPER should be read as a government document. With respect to the project outputs described earlier, UNDP questioned the strategy for the twinning arrangements. The issue should be looked at in terms of cost effectiveness, and opportunity costs of such an arrangement. UNDP suggested to the project management to reconsider the approach taken and look at African training institutions first, other developing countries institutions second and finally, if need arises, to go to industrialized countries for training.

The CTA stressed that the project document specifies twinning arrangements to be established with developed as well as developing countries.

On the staffing strategy for the centre, UNDP made a suggestion which was well received, requesting Ethiopian embassies abroad to assist EEI in finding suitable foreign trained Ethiopians for recruitment as instructors.

With regard to the suggestion of the project document to establish a Technology Transfer Centre and an Innovation and Development Centre, UNDP made aware of the fact that similar institutions were already existing and a duplication of efforts would waste scarce resources. It was suggested to look into the idea of establishing these Centres more thoroughly and discuss alternatives to the extent where a consulting group including all advantages of different centres could be established.

UNIDO mentioned the relevance of the EEI with respect to the Fifth Country Program where the problem of an acute shortage of trained people would be addressed. In response to the points raised by UNDP on the establishment of the Centres, it was observed that the problem most likely lies in the use of terminology rather than the relevance of the idea. The spirit of these Centres would be one of an institution/industry linkage.

With respect to the request for additional funds from the project, the history of the project was given as an explanation for inadequate budget allocations right from the start. UNIDO supported the request of the project for additional funds amounting to USD 243,000 including the project vehicle.

The position of the Ministry of Energy and Mines with regard to the relevance of the EEI was a positive one. The Ministry also envisages the EEI as a regional Centre enabling the institute to be self-financed and self-sufficient. The idea of recruiting Ethiopian instructors from abroad found great acceptance with the Ministry. It was expressed that full support will also be given in the future to make EEI a success.

III. DECISIONS AND RECOMMENDATIONS

The following recommendations were made:

1. One of the objectives of the EEI should be to attract foreign students in the long-term in order to become self-sufficient and benefit also neighbouring African countries. UNIDO's role in assisting these efforts would be highly appreciated.

2. In view of the advanced stage of preparations made for the study tour for twinning arrangements it is recommended to be carried out as planned, since a delay in the timing of arrangements would be inappropriate at this stage, although for the future similar arrangements should be approached as suggested by UNDP earlier.

3. The duplication of Centres in Ethiopia has led to a fatigue within the government. If appropriate facilities are already existent, those should be adjusted to the prevailing environment and be used. For the establishment of new facilities there should be a good justification of the need for such new Centres.

4. Additional funds required were recommended for approval. The additional equipment required relates to training materials and would therefore contribute to saving resources in sending people abroad for training. Yet, the additional funds would have to be accommodated under BL 42-00 for equipment requiring the local UNDP office to refer the budget revision to UNDP HQs in N.Y. for approval. The project vehicle may be excluded from the list of equipment to be transferred to Government at the end of Phase I of the project cycle. The vehicle would automatically be transferred to the second phase of the project as the first phase will be completed by June 1993.

5. It was agreed that an evaluation of phase I should be carried out in January 1993 to review the progress of phase I, to identify the phase II needs and to finalize the project document.

The question of implementation of the AfDB funded project component was briefly discussed and it was agreed that it may be further discussed with the Ministry of External Economic Co-operation in the coming days.

ANNEX

Comments Given by the CTA with Respect to:

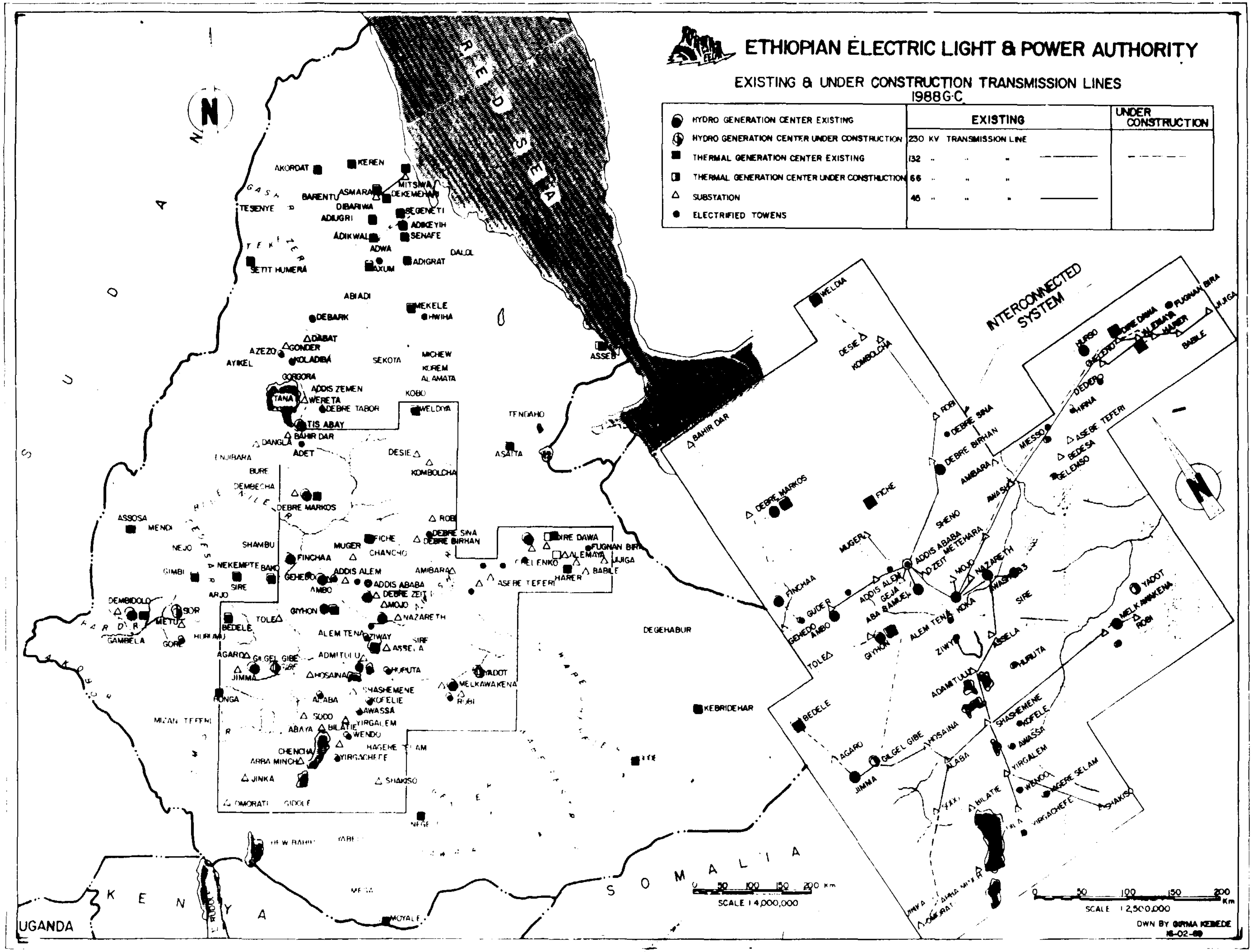
Page 2, Output 4:

The in-country training for the administrative staff began with the arrival of the CTA in October 1991, when he began working directly with the new EEI Director. Five seminars/workshops have been developed and will be conducted by the CTA during the first and/or second semester (1993). All administrators and supervisory staff will be in attendance.

Page 3, paragraph 2 on twinning arrangements:

The wisdom of proceeding with the establishment of MOU's with institutions in developing countries was questioned. It was noted that the project document calls for MOU(s) with institutions in both developing and developed countries. The next study tour to a developing country financed by ADB, may quickly follow, even during UNDP/UNIDO Phase I, so sequence is not important. Furthermore, the first study tour, as scheduled, is designed to accomplish more than a draft MOU. Attendance at the American Vocational Association Convention will provide opportunity for both EELPA and ETA officials to verify their equipment lists generated by UNIDO advisors, and develop purchase requisitions for the equipment funded under UNDP/UNIDO Phase II. As a point of clarification, it should be noted that some parts of a draft MOU may be expected at any given time if the two parties agree. However, it is still our intent to remain within guidelines of the project document whereby it is necessary to develop a long range twinning plan. This will be accomplished after visitations to both developing and developed countries and then manifest itself in official or authorized MOU with the twinning institutions.

Annex XII



ETHIOPIAN ELECTRIC LIGHT & POWER AUTHORITY
EXISTING & UNDER CONSTRUCTION TRANSMISSION LINES
1988 G.C
HYDRO GENERATION CENTER EXISTING
HYDRO GENERATION CENTER UNDER CONSTRUCTION
THERMAL GENERATION CENTER EXISTING
THERMAL GENERATION CENTER UNDER CONSTRUCTION
SUBSTATION
ELECTRIFIED TOWENS
EXISTING
UNDER CONSTRUCTION
230 KV TRANSMISSION LINE
132
66
45
RED SEA
INTERCONNECTED SYSTEM
SUDAN
SOMALIA
KENYA
UGANDA
SCALE 1:4,000,000
SCALE 1:2,500,000
DWN BY GIRMA KEBEDE
16-02-88

Date of completion : 19 October 1993
Name of evaluator : Damian Lascu
Project Number : ETH/88/011

CENTRAL EVALUATION OFFICE

PROJECT EVALUATION INFORMATION SHEET

PROJECT EVALUATION INFORMATION SHEET

Part I: Basic Project Information

1) Project Number: ETH/88/011 — Use the format GUY/81/003*1 signifying the number of times the project has been evaluated.

2) Project Title: ESTABLISHMENT OF AN ELECTRICAL AND ELECTRONICS INSTITUTE (150 characters limit)

3) Executing Agency: UNIDO — Use only English acronyms (e.g. ILO rathert than OIT)

4) Budget at Time of Evaluation: 921,000 — To nearest thousand: no dollar signs or punctuat ion marks.

5) UNDP Contribution: 921,000

6) Cost Sharing: —

7) ACC Subsector: _____ (Four digits)

8) Current Phase of the Project: PREPARATORY

9) Scheduled completion date of project: Day 10 Month 10 Year 92
Project approval date: 10 5 91

10) Regional Bureau: RBA

11) Year of Evaluation: 93 (Two digits)

12) Type of Evaluation: 1E — 1E = Mid term; 2E = Terminal; 3E = Ex-post.

13) Functional Descriptors: PRIMARY: FP 15 — See descriptors listing at the end of the docu-
SECONDARY: FS 15

14) Thematic Descriptors: Each project should focus on building and strengthening national capacity in one or more of the following six thematic areas. Wich of them is promoted by the project? Use 7A,1B or 6B for "yes", "partially" or "no".

- o Poverty Eradication and grass-roots participation in development ------
- o Environmental problems and natural resources management 1B
- o Management development 1B
- o Technical co-operation among developing countries 1B
- o Transfer and adaptation of technology for development
- o Women in Development ------

Project Descriptors: PDP006 PDT004 PDT003 PDP001

Report Descriptors: RD1001 RDG002 RDN001 RDS002

Cluster evaluation:	6B	7a = Yes; 6B = No.
This project is the lead project in the cluster	1D	6B = No; 7A = Yes; 1D = Not applicable.
For cluster evalution, list projects, starting with the lead project	1D	If not applicable enter 1D.

PRESENTATION ON EVALUATION MISSION

) UNDP	1S	1S = consultant;
) Executing Agency	2S	2S = staff;
) Government	3S	3S = both consultant and staff;
) Represantation by other parties	6B	6B = No

PART II - TERMS OF REFERENCE (TOR) OF THE EVALUATION MISSION

7A = Yes;
6B = No;

1) Were the TOR project-specific?	7A
2) Did TOR require assessment of project design?	7A
3) Did TOR require assessment of personnel?	7A
4) Did TOR require assessment of equipment?	7A
5) Did TOR require assessment of training?	7A
6) Did TOR require assessment of results?	7A
7) Did TOR require assessment of management?	7A
8) Did TOR require assessment of environment?	6B
9) Did TOR require assessment of women in development?	6B
10) Did TOR require assessment of beneficiaries?	6B
11) Did TOR require assessment of sustainability?	7A
12) Did TOR require assessment of the project's co-ordination with other development efforts in the country?	7A

Part III: Project Design

All questions in this section refer to the current design of the pro ject. If the original objectives, outputs, inputs and activities of the project have been modified, then the qu tions below refer tothe modified versions.

1) How well was the project designed? 6A

1A = very good;
2A = good;
6A = satisfactory;
4B = poor;

2) Has the design of the current phase built on the results of previous phase(s)? 4N.

7B = Yes
1B = Partially;
6B = No.
4N = Current Phase is Phase

3) Was the project linked to important national/sectoral objectives? 7A

7A = Yes;
1B = Partiall y;
6B = No;

4) Were the beneficiaries/target group identified? 7A

5) Did the project design account for socio-economic factors? 6B

Were the immediate objectives clear 7A

7) Were the immediate objectives internally consistent? 7A

8) Do outputs and activities logically lead to the achievement of the immediate objectives? 7A

9) Did the design include success criteria? 6B

10) Are the immediate objectives still relevant? 7A

11) Were the immediate objectives overly ambitious? 7A

12) Were the external assumptions optimistic? 7A

13) Did the project have a realistic time frame? 1B

14) Was the institutional arrangement appropriate 1B

15) Was the design of the project (objectives, outputs, inputs and activities) modified during implementation? 6B

6) Did the mission draw any major findings/lessons 7A.

7A = Yes;
6B = No;
If 7A explain in Part X.

Part IV : Assessment of Project Personnel

1) Main composition of international personnel.	1.P 2.P 3.P	1P = long-term experts 2P = short-term experts 3P = consultants 4P = associate experts 5P = UNVs
2) Assessment of appropriateness of international personnel.	2.A	1A = very good; 2A = good; 6A = satisfactory; 4B = poor
3) Assessment of performance of international personnel.	6.A	
4) Was there a shortage of international personnel?	6.B	7A = yes; 6B = no
5) Were there delays in the arrival of international personnel?	6.B	
6) Was international personnel fully utilized?	1.B	
7) Did the project make use of national experts?	6.B	
8) Assessment of appropriateness of national experts.	1.D	1A = very good; 2A = good; 6A = satisfactory; 4B = poor; 1D = not applicable
9) Were national experts fully utilised.	1.D	
10) Assessment of performance of national experts.	1.D	
11) Assessment of appropriateness of counterpart staff.	2.A	
12) Assessment of performance of counterpart staff.	2.A	
13) Was there a shortage of counterpart staff?	6.B	7A = yes; 6B = no;
14) Were there delays in the appointment of counterpart staff.	6.B	
15) Did the mission draw major findings/ lessons	7.A	7A = yes; 6B = no If 7A go to section X

Part V : Assessment of Training

1) Assessment of fellowing training. 4B

1A = very good;
2A = good;
6A = satisfactory;
4B = poor;
1D = not applicable

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2) Was there a shortage of fellowship candidates? 7A

7A = yes;
6B = no;
1B = partially;
1D = not applicable

3) Were there delays in fellowship training? 7A

4) Were the fellowship trainees fully utilized? 1D

5) Did the followship candidates have language problems? 1D

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6) Assessment of in-service training 4B

1A = very good;
2A = good;
6A = satisfactory;
4B = poor;
1D = not applicable

---

7) Was there a shortage of in-service trainees? 7A

7A = yes;
6B = no;
1B = partially;
1D = not applicable

8) Were there delays in-service training? 1D

9) Were the on-the-job trainees significantly utilized? 6B

10) Was the training methodology appropriate 1D

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11) Did the mission draw any major findings/ lessons on training 7A

7A = yes
6B = no
If the answer is 7A, explain in Part X

PART VI : ASSESSMENT OF EQUIPMENT AND INFRASTRUCTURE

1)	Assessment of results related to equipment	4B
2)	Were there delays in the procurement of equipment?	6B
3)	Was the equipment of suitable quality?	7A
4)	Was the equipment appropriate?	7A
5)	Was the equipment significantly utilized?	6B
6)	Was there a shortage of spare parts?	1D
7)	Was the equipment properly maintained?	1D
8)	Can the use of equipment be sustained after project completion?	1D
9)	Were there problems with the provision of physical facilities?	7A
10)	Were there problems with transport facilities?	6B
11)	Did the mission draw any major findings/ lessons on equipment?	7A

1A = very good;
2A = good;
6A = satisfactory;
4B = poor;
1D = not applicable

7A = yes;
1B = partially
6B = no
1D = not applicable

7A = yes ;
6B = no;
If the answer is 7A explain in Part X.

Part VII: Assessment of Management

1) How well was the project managed? 4B

1A = very good;
2A = good;
6A = satisfactory;
4B = poor;

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2) Was the project managed solely by a National Project Director? 6B

7A = yes;
6B = no;

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3) How well was the project monitored by the parties concerned? 4B

1A = very g ood;
2A = good;
6A = satisfactory;
4B = poor;

4) Assessment of UNDP field office support 4B

5) Assessment of agency backstopping 4B

6) Assessment of co-ordination among Government Agency and UNDP; 4B

7) Assessment of co-ordination with other development efforts in the country: 4B

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8) Was the workplan realistic? 6B

7A = yes;
6B = no;
6D = no workplan exists;

9) Did the project experience overall delays? 7A

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10) What was the impact of overall delays on the project? 8B

3C = pos sible set-backs were overcome;
4C = delays caused permanent set-backs in implementation;
8B = no significant impact
1D = not applicable

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11) Did the mission draw any major findings/ 7A

7A = yes ;
6B = no;

If the answer is 7A explain in Part X.

Part VIII : Government Support

1)	Overall government support to the project:	4B	1A = very goo d; 2A = good; 6A = satisfactory; 4B = poor; 1D = not applicable
2)	Personnel		
3)	Training policy	1D	1C = positive 2C = negative 1D = not appl icable
4)	Research policy	1D	
5)	Procurement policy	1D	
6)	Pricing/tax policy	1D	
7)	Foreign trade policy	1D	
8)	Sectoral policy	1D	
9)	Regional policy	1D	
10)	Others (specify)	7A	7A = yes; 6B = no. If yes, explain in Part X.
11)	Did the experience of the project highlight a need for change in government policy?	6B	7A = yes ; 6B = no;
12)	Did the mission draw any major findings/ lessons on government support?	7A	7A = yes; 6B = no; If the answer is 7A, explain in Part X.

PART IX - Assessment of Results

Nota Bene. Complete either part A or part B as appropriate. Part C should always be completed!

A. Midterm Evaluation

1) What are the overall achievements of the project at the time of evaluation? 3B

2) Have the beneficiaries of the project been reached or are they likely to be reached? 6B

3) Is a mid-course change in project approach necessary? 7A

4) Are the overall achievements likely to be sustained after assistance is withdrawn? 6B

4A = exceed target
8A = on target
3B = below target

7A = yes
1B = partially
6B = no

B. Terminal and Ex-post Evaluations

5) What are the overall achievements of the project at the time of evaluation? ....

6) To what extent has institution-building been achieved? ....

7) To what extent were the immediate objectives achieved? ....

8) To what extent were the outputs achieved? ....

9) Have the beneficiaries of the project been reached? ....

10) Can the overall achievements be sustained after assistance is withdrawn? ....

3A = successful;
2B = part. successf.
7B = unsuccessful;

5A = significant;
6A = satisfactory;
4B = poor;

7A = yes;
1B = partially;
6B = no;

C. Future assistance to project

11) Mission's recommendations on future assistance

1M = Extension;

1Mn = Extension (1M); n indicates the period of extension in months. Eg., 1M9 = 9 Months extension;

2M = New phase/project;
4M = Termination of project;
5M = no recommendation on future assistance

PART X - TEXTUAL INFORMATION

1. SUMMARY OF IMMEDIATE OBJECTIVES AND OUTPUTS

PROJECT IMMEDIATE OBJECTIVE: assist in the initial establishment of an Electrical and Electronics Institute which, when fully established, is expected to provide training and to meet the expanded demand for qualified skilled instructors and middle/high level technicians in both public utility organizations, and within industrial establishments.

output one: Curricula developed consisting of High Tech Core and Advance Specialty Training...

output two: Fifty trained or upgraded instructors for the EEI in the field of methodology, use of audio-visual equipment, preparation and production of training material.

output three: Equipment required for the institute identified and finalized.

output four: Three administrative staff trained.

output five: First batch trainees admitted and instruction carried out for first year Electrical Power and Telecommunications programme.

output six: Two overseas institutions identified for a "twinning arrangement" for long-term sustained training opportunities and a workplan prepared to implement the arrangement in the Phase II and beyond the project.

2. FINDINGS ON PROJECT IDENTIFICATION AND DESIGN

a. There is no evidence that the capacity of the institute (number of technicians to be trained on short, medium and long-term) was established on a reliable basis: needs assessment, development assumptions, and others.

b. Number of instructors (50) to be trained to acquire M.Ed. abroad appears unnecessarily high, which makes the project very expensive and unaffordable for Ethiopia, not mentioning the risks of loosing precious professional staff for good.

c. Conditionalities and risks are not strong and clear enough and are treated in a casual manner, resulting in lack of consequences for non payment of local operating costs by Government.

d. Critical outputs are not sufficiently focalized so that it could be clearly determined outputs whose implementation becomes irrelevant when key outputs are not executed. Example: the Study Tour for "twinning" was organized while EEI had not even been established.

3. FINDINGS ON GENERAL RESULTS OF PROJECT

a. Implementation rates are as follows: outputs, 58%; costs, 135%; time, 116%.

b. Outputs one, three, four and six delivered to a large extent. However, because non implementation of outputs two and five, which are major outputs within the project strategy, the project results are marginal. For this reason, the project should be considered not very far from the starting point. Nevertheless, assuming that the main problems faced by the project are solved satisfactorily, the preparatory phase can be completed within one year.

4. MAIN PROBLEMS FACED BY PROJECT

a. UNDP assistance to this project should be conditioned by two factors, both depending exclusively on Government:

o first, institute acquiring its permanent instruction staff. This is critical for the sustainability of the institution; and,

o second, short and medium term availability of resources for local operating costs of the institute.

b. Other factors inhibiting the project:

o No counterpart professional staff available;

o No effective coordination;

o No properly designed workplan;

o No focus on essential outputs and activities;

o No adequate monitoring by UNDP;

o No substantive/technical backstopping by Executing Agency.

5. SUMMARY OF RECOMMENDATIONS

a. Strong support and medium-term commitment by Government, UNDP and ADF. In the long-term, the institute is expected to become self-sufficient. Action: Government and UNDP.

b. Resume activities based on original project strategy but with a reduced number of instructors and trainees, both categories to increase gradually during the project life, in line with the capacity of the institute, with the results of a study on needs assessment in technicians, and with a refined strategy to match the findings of the study. Action: Government, UNIDO and UNDP.

c. Review the needs for training instructors abroad, to reduce them at minimum, and compensate with in-country training, possibly by achieving M.Ed. at Addis Ababa University. Experienced trainers may not need M.Ed. at all, and training on fellowship abroad would suffice. Action: Government, UNIDO and UNDP.

d. Review and formalize coordination arrangements. Action: Government.

e. Strengthen UNDP local monitoring capacity in order to synchronize inputs with availability of Government inputs and to make sure that the project provides timely and correct outputs in terms of quality and quantity. Present UNDP/UNIDO joint project monitory arrangements should cease immediately. Action: UNDP.

f. Formulate and approve the integrated UNDP/ADF project document for the fulfledged implementation of this project (UNDP Second Phase). Prepare a professional workplan for the integrated project to be used as management tool by participating parties. Action: Government, UNIDO and UNDP.

g. Strive for academic excellence as base for national, regional and international recognition and prerequisite for long-term sustainability. Action: Government and UNIDO.

h. Gender issues should be recognized as important and receive particular attention. Action: Government.

i. Next in-depth project evaluation should be organized two years after the approval of the integrated UNDP/ADF funded project. Action: UNDP and ADF.

j. During a three years period after resumption of implementation, PPERs should be prepared and submitted every six months and the TRM should be held with the same periodicity. Action: Government, UNIDO and UNDP.

6. LESSONS LEARNT

a. In formulating and committing resources for UNDP supported projects, affordability and realism should be of prime concern.

b. Project resources and energies should be focused first of all on key outputs and activities. This policy should be part of the implementation strategy, to be incorporated in project design at the formulation stage.

c. Effective project monitoring by UNDP is a critical function for the success of any project. To delegate this function to the Executing Agency will certainly submit the project to costly, unnecessary risks.