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TÜBİTAK

TÜSSİDE

Module 1:
Technology Foresight for Organizers

Gebze (Turkey)

19-23 November 2007

Final Report

United Nations Industrial Development Organization

Turkish International Cooperation and Development Agency

Turkish Ministry of Industry and Trade

The Scientific and Technological Research Council of Turkey

TÜBİTAK

Contents

Appendix

Preface

This report presents the results of the five-day training course on technology foresight for organizers held on 19-23 November 2007 in Gebze, Turkey. The course is the first module of 2007-2008 training program for organizers of national/ regional technology foresight (TF) exercises. The program was held with the contribution and initiatives of United Nations Industrial Development Organization (UNIDO), The Turkish International Cooperation Administration (TICA), Turkish Ministry of Industry and Trade and The Scientific and Technological Research Council of Turkey (TUBITAK) at the premises of Turkish Institute for Industrial Management (TUSSIDE)

Summary

The main objective of the training course is to provide the professionals responsible for organizing and conducting foresight exercises with the critical mass of expertise in order to enable them to launch national and regional foresight activities in Central and Eastern Europe (CEE) and the Newly Independent States (NIS) in Central Asia, Middle East and Northern Africa.

The objective of this training programme is to provide basic knowledge on application of Technology Foresight (TF) tools in strategic decision-making for technological development, modalities of implementation of TF initiatives, available TF methodologies, and TF experience and prospects in the CEE and the NIS region.

The expected outcomes of this course had been defined as in the following:

- Around 30 experts from selected countries and 5-10 experts from Turkey (host country) trained on organizing and conducting technology foresight programs in their countries
- Definition of the framework for TF exercises at national and regional levels
- Improved awareness on the importance of TF for strategic decision making for industrial and technological development
- Supply examples of current TF applications, providing an opportunity for developments and to discuss their outcomes.

The course was accomplished with the number of 20 participants from the selected countries (Albania, Botswana, Ethiopia, Estonia, India, Lithuania, Nigeria, Pakistan, Sudan) and representatives from Turkish agencies 19-23 November 2007 at TUSSIDE, located in Gebze, Turkey.

The course programme (please see Appendix A) has been designed as introducing foresight as a tool to shape the future, defining scope and focus of foresight exercises, presenting methods used in illustrative examples and case studies. Also, the participants have had the opportunity of simulating a foresight exercise during the course. The presentations of lecturers and the practical exercises done by participants in groups are available at the end of the report (please see Appendix B). The list of participants in groups is also included in Appendix C.

In addition, there were some workshops on personal and group motivation related with creativity.

The participants were provided with the materials such as UNIDO Technology Foresight Manual (CD-Rom and printout), workbook and hand-outs of working material. At the end of course they were honored with the certificate of course completion.

The training course was offered free of charge for all selected participants *(please see Appendix D)* for five days at TUSSIDE.

Conclusion

With the course, targeted awareness on foresight has been reached, experiences from different countries and organizations have been shared, stimulating discussions on foresight exercises and cases have been arosen.

It is hoped that the programme composed of three modules will contribute to further developments on foresight studies and provide more sustainable and innovative development in countries.

Appendix

Appendix A- Course Programme

2007 TRAINING PROGRAMME ON TECHNOLOGY FORESIGHT

Regional Initiative on Technology Foresight for Central and Eastern Europe and the Newly Independent States

Module 1: Technology Foresight for Organizers, Gebze/Istanbul (Turkey), 19-23 November 2007

Programme

Sunday 18 November 2007

from time of arrival till 19.00	**Reading and preparation for the next day training exercise**
19:00-20:00	**Registration and Welcome Reception**
20:00-20:30	**Introducing the Programme, the Participants and the Practical Sessions** Serhat Cakir, Scientific and Technological Research Council of Turkey (TUBITAK)
20:30-21:30	**Getting to know each other workshop** Ugur Degirmencioglu and Inanc Ayar, TUSSIDE

Day 1 – Monday 19 November 2007

08:30-09:00	**Opening Ceremony** Representatives of: *TUBITAK, TUSSIDE, TICA, UNIDO, Governments of Hungary, Czech Republic and Slovak Republic, MIT.*
09:00-10:00	**Introduction to Technology Foresight** Ian Miles, PREST, UK *Introduction to technology foresight along with its background and basic principles and concepts, and expected outcomes from TF programmes. Highlight of good practices in different countries.*
10:00-10:30	**Coffee/Tea Break**

Appendix A- Course Programme (continued)

Block I: Role of Foresight in Science, Technology and Innovation Policy Formulation

10:30-11:30 **Technology Policy and Innovation System**
Ricardo Seidl da Fonseca, UNIDO, Austria
Innovation systems and technology development. The structure of policy-making for innovation. The structure of Foresight process. The contribution of Foresight to policy-making process in science and technology.

11:30-12:30 **Role of Foresight in Strategic Thinking and Policy Formation**
Francoise Warrant, Destree Institute, Belgium
The role of foresight in the formation of a long-term science, technology and innovation (STI) policy of a country. Discussion on how the results of a foresight study ought to be incorporated into a long-term STI policy to enhance the competitiveness of a country and a region.

12:30-13:30 **Lunch**

13:30-14:30 **Foresight in Policy cycles: case of Romania**
Adrian Curaj, Ministry of Education and Research, Romania

14:30-15:30 **Group work on the case of Romania**
Moderators: Campbell Warden and Adrian Curaj

15:30-16:00 **Coffee/Tea Break**

16:00-17:00 **Scope and Focus of Foresight Exercises**
Francoise Warrant, Destree Institute, Belgium
Types of foresight programmes and their relevance to various policies. The importance of defining the focus (e.g. S&T, techno-economic or societal/ socio-economic orientation), geographical scope, themes and time horizon of a foresight programme. Choosing appropriate methods and mobilizing relevant stakeholders and participants. The significance of the process of foresighting.

17:00-18:00 **Vision 2023: Rationale and Scope**
Serhat Cakir, Scientific and Technological Research Council of Turkey (TUBITAK)
Presentation of the Vision 2023, the Turkish TF study: its rationale, scope, structure, methodology and findings.

18:00-19:00 **Dinner**

Evening **Personal and Group Motivation Workshop**
Ugur Degirmencioglu and Inanc Ayar, TUSSIDE

Alternative: reading and preparation for next day training exercises.

Appendix A- Course Programme (continued)

Day 2 – Tuesday 20 November 2007

08:30-08:50

Harmony Workshop
Ugur Degirmencioglu and Inanc Ayar, TUSSIDE

Block II: Technology Foresight Process

09:00-10:00 **Organizing and Managing a Foresight Exercise**
Ian Miles, PREST, University of Manchester, UK
Objectives, sponsors, identification of stakeholders, executive and management structure, milestones, choosing suitable methods, achieving results, communication strategy, budget, timing, reporting, implementation of results, evaluation, ensuring continuity, creating foresight culture at different levels.

10:00-10:30 **Coffee/Tea Break**

10:30-11:30 **Foresight in a multi-country context: the fishery case in Latin America**
Ricardo Seidl da Fonseca, UNIDO, Austria
The role of TF in formulation of technology policies in a regional perspective. Production and value chains as focus for TF exercises. Presentation of the foresight exercise for the fishery industry in the Pacific Coat of South America.

11:30-12:30 **Group work on the fishery case**
Moderator: Ricardo Seidl da Fonseca and Ozcan Saritas

12:30-13:30 **Lunch**

13:30-15:00 **Practical Exercise**
Participants will start developing a project plan for foresight exercise
Moderators: Ian Miles, Françoise Warrant, Ozcan Saritas and Campbell Warden

1. Scoping

- Participants discuss and select their topic and level of the exercise (e.g. national/regional/multi-country)
- Identify rationales of the programme
- Determine the focus
- Discuss the coverage
- Time horizon

15:00-15:30 **Coffee/Tea Break**

Appendix A- Course Programme (continued)

15:30-18:00 **Practical Exercise**

Participants continue developing a project plan for foresight exercises:

- Resources available (skills, available information, funds and time)

2. Recruitment

- Identify stakeholders, actors and policy players
- Discuss the Target Audience & the Communication Plan
- Identify participants for the Foresight exercise:
  - Differentiate between Steering Committee/Project Team and the different types of expert participants (methodology, topic, social actors, etc); those physically present or remotely sampled;
  - Match appropriate forms of communication with different classes of participants;

18:00-19:00 **Dinner**

Evening **Creativity Workshop I**

Ugur Degirmencioglu and Inanc Ayar, TUSSIDE

Alternative: reading and preparation for next day training exercises.

Day 3 – Wednesday 21 November 2007

08:30-08:50 **Harmony Workshop**

Ugur Degirmencioglu and Inanc Ayar, TUSSIDE

Block III: Technology Foresight Methods

09:00-10:00 **Overview of Foresight Methods**

Ian Miles, PREST, University of Manchester, UK

10:00-11:00 **Ideas Generation and Brainstorming**

Tahsin Erkan Ture, International University of Sarajevo, Bosnia and Herzegovina

Presentation of different methods of creative thinking, brainstorming principles, practical exercise.

11:00-11:30 **Coffee/ Tea Break**

11:30-12:30 **STEEP and SWOT Analysis**

Tahsin Erkan Ture, International University of Sarajevo, Bosnia and Herzegovina

Generation of ideas, their proliferation and transformation into tangible notions; communication needs and skills; analysis of Social, Technological, Economical, Environmental and Political (STEEP) issues and trends; use of Strengths, Weaknesses, Opportunities and Threats (SWOT).

12:30-13:30 **Lunch**

Appendix A- Course Programme (continued)

13:30-14:15 **Group Work on Project Plan (organizational aspects and methods)**
Moderator: Tahsin Erkan Ture

3. Generation

- Discuss appropriate methods for Foresight
- Plan Foresight work
  - Determine the duration of the Foresight exercise
  - Targets, Milestones and Deadlines for the exercise
  - Prepare short Terms of Reference for Foresight panels
  -

14:15-15:00 **An application of some Knowledge Concepts to Foresight**
Moderator: Campbell Warden, EARMA, Spain
Presentation by Rapporteurs of progress so far

15:00-15:30 **Coffee/ Tea Break**

15:30-17:00 **Practical Exercise**
Moderators: Ian Miles, Ozcan Saritas, Campbell Warden, Serhat Cakir and Tahsin Erkan Ture

Environmental Scanning, Trends and Drivers

- Environmental Scanning
- STEEPV Analysis
- Analysis of Trends and Drivers
- Introduce other information sources (e.g. literature review, database analysis, interviews etc.)

17:00-19:00 **Dinner in Istanbul**

Alternative: Reading and preparation for next day training exercises

Day 4 – Thursday 22 November 2007

08:20-08:50 **Creativity Workshop II**
Ugur Degirmencioglu and Inanc Ayar, TUSSIDE

09:00-10:00 **Scenario Planning**
Ian Miles, PREST, University of Manchester, UK
Principles, scenario generation, organization a scenario workshop.

10:00-11:00 **Group work on scenario workshop:**
Ian Miles, PREST, University of Manchester, UK
Develop scenarios under a professional guidance

11:00-11:30 **Coffee/ Tea Break**

Appendix A- Course Programme (continued)

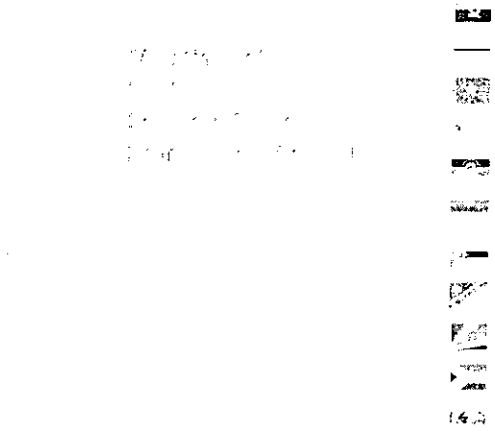
11:30-12:30	**Expert panels** Ozcan Saritas, PREST, University of Manchester, UK *Principles, process, examples, case studies.*
12:30-13:30	**Lunch**
13:30-15:00	**Group work: Expert panels for Setting Priorities** Ozcan Saritas and Campbell Warden *Participants organized in expert panels will define priorities for foresight exercise cases.*
15.00-15:30	**Coffee/ Tea Break**
15:30-16:30	**Delphi Survey** Serhat Cakir, Scientific and Technological Research Council of Turkey (TUBITAK)
16:30-18:00	**Group Work on Delphi Survey** Moderators: Serhat Cakir and Ozcan Saritas
18:00-19:00	**Dinner**
Evening	**Finalization of foresight planning exercise developed by the groups of participants (self-organized)**

Day 5 – Friday 23 November 2007

09:00-10:00	**Testing of Knowledge Acquired During the Course** *Course participants will be submitted to a multiple-choice test*
10:00-12:00	**Practical Exercise:** *Presentations of foresight planning exercise developed by the groups of participants, feedback from the facilitators and the audience* Moderator: Campbell Warden, EARMA, Spain
12:00-13:00	**Awarding diplomas, final discussion and closing ceremony**
13:00-14:00	**Lunch**
14:00-18:30	**Departure arrangements**

Appendix B - Completed Projects

GROUP A



Renewable Energy: the challenge of a continuos dialogue

C-eNERGY 2030

Our future, Our Energy, Our Voice.....

UNIDO

C-eNERGY 1

Preamble

On August 2007, 14 states of Southern Africa gathered in Zambia to discuss on the future, sustainable development and renewable energy.

Considering that in recent years, the states of SADC have witnessed massive increases in the costs of imported fuel and instability in supply security and they commit to implement the main power generation and transmission projects, including interconnector projects to ensure the availability of adequate regional energy security in order to meet the projected demand

The region has a well established industrial base and these industries need both reliable energy supply and long-term, sustainable economic growth. Energy security can only be brought about through a proper balance between traditional (imported) and renewable (local production) combined with intensive dialogues between producer, transit lines and major consumers.

Energy efficiency and renewable energies are vital for climate protection and must be promoted through greatly enhanced cooperation.

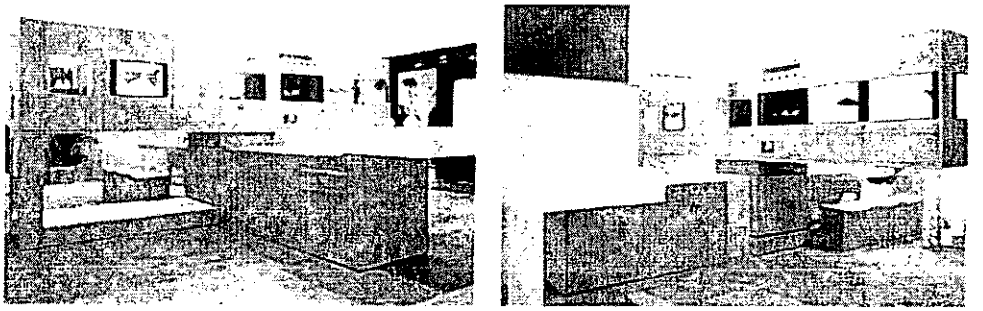
Constant innovation can advance their development decisively.

Therefore, they declare this resolution that constitutes their political will to support and encourage transfer of researcher's and research institutions' economic and scientific know-how to energy producers.

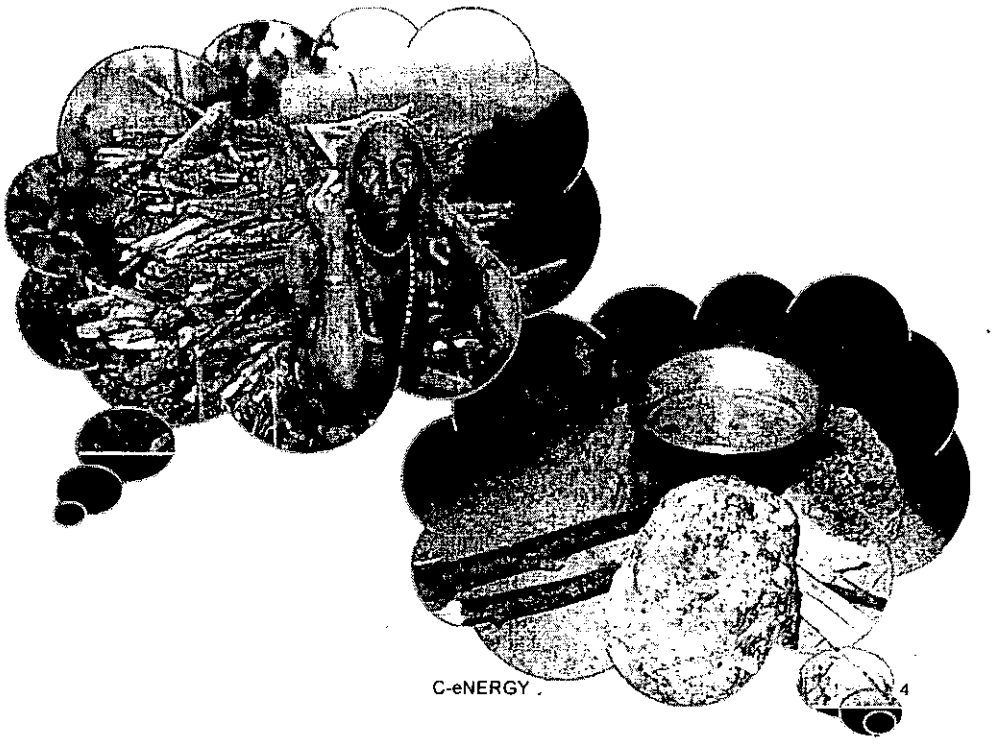
2

GROUP A

VIGNETTE of 2030: Okocha and his grandfather



C-eNERGY 3



C-eNERGY 4

GROUP A

U – NID – Ovesun!

C-eNERGY 6

GROUP A

Objectives

- Promoting sustainable development of technology system & tools to provide renewable energy for economic growth
- Develop research based network & cooperation on energy use & production
- Develop research-based policy on energy production & use

C-eNERGY 7

Outcomes

Product outcomes:

- Priority list
- Creating business opportunities
- Policy recommendations & new laws
- Action plan

Process Outcomes:

- Participation of stakeholders
- Capacity building & new expertise
- Networking

C-eNERGY 8

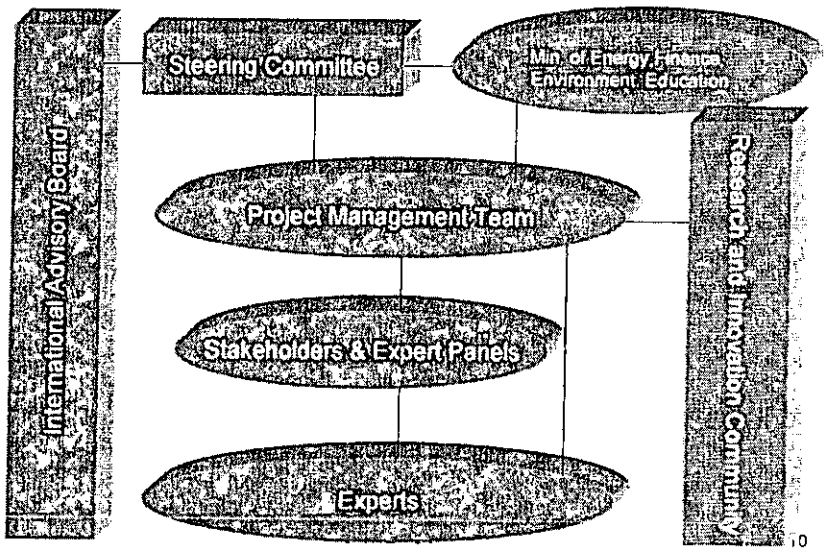
GROUP A

Evaluation

- Did we use the right methodology?
- Did we address the issues in a realistic & feasible way?
- Did we create the desired impact?

C-eNERGY 9

The Process (Nov 2007 – Jun 2009)



GROUP A

Realistic & Feasible

People

- Decision-makers
- Energy specialist
- Environmentalist
- Knowledgeable people
- Well connected people
- Open-minded people
- Data analysts

C-eNERGY 11

Realistic & Feasible (2)

Principles

- Political will
- Transparency
- Inclusion
- Accountability
- Professionalism & Competence

C-eNERGY 12

GROUP A

Realistic & Feasible (3)

Tools

- Reports (Progressive, frequent) *
- Communication / Aide Memory Notes (Steering Structure) *
- *Press Releases*
- Awareness Campaigns Tools, Brochures, Handouts, Leaflets, Posters
- Press Conferences
- TV /Radio Talk Shows
- Progress Team Meetings *
- E-communication Tools, Websites, Pools, Surveys *
- Workshop / Conferences

C-eNERGY 13

The Desired Impact

Alternative futures for development and the desired results *were explored through*:

Understanding	**Synthesis & Models**	**Analysis & Scenarios**	**Transformations**	**Actions**
Literature reviews	*Brainstorming*	*SWOT*	*Road mapping*	*Priority lists*
Key indicators/trends	Scenario planning/writing	STEEP	Strategic planning	Action planning
Interviews	Trend analysis	Cross impact		Impact assessments
Panels	*Forecasts*	*Prioritization*		
	Wild card analysis	Polls		

C-eNERGY 14

GROUP A

What makes us confident?

- Skilled work-force (research)
- Political Interest of FI & Governments
- Exchange and cooperation on technology

C-eNERGY 15

What makes us confident? (2)

- Improved coordination, partnerships and networks, between research, economic and energy-producing actors in the SADC region;
- A strategic foresight 'toolkits' and intelligence for governments, firms and intermediaries, and other regional stakeholders;
- Continuous dialogue, new ad hoc standing fora for stakeholder and public debate
- Increased no. of jobs and projects, priority-setting and action plans, based on wider knowledge and with distinctive legitimacy

C-eNERGY 16

GROUP A

At the C-Energy Group we believe that....

Qui non est hodie cras minus aptus erit.
He who is not prepared today will be less so tomorrow.

Publius Ovidius Naso *Mar[illegible] BC – 17AD*

Join the team where Yasemin, Obi, Andrew, Fadil, Mengistu and Admir work, and discover a new horizon of renewable energy!
Please contact us for any question/comment/ request!

Thank you!

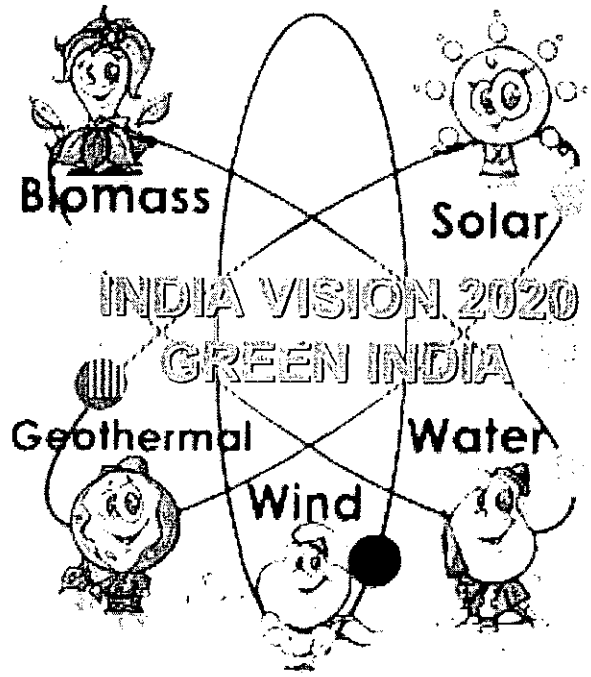
C-eNERGY 17

.....to be continued....

C-eNERGY 18

Appendix B - Completed Projects (continued)

GROUP B



UNIDO TUSSIDE

- The presentation of the team
- Introduction
- Scoping
- Recruitment
- Generation
- Outputs
- Summary

TIES Technology Foresight Exercise, Gebze
November 23, 2007 GREEN INDIA 2020

GROUP B

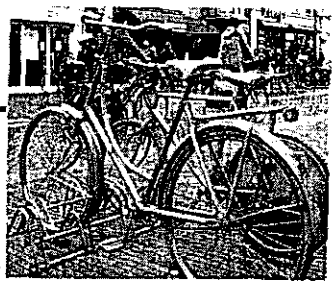
urkey, Leyla Arsan, Nermin Sokmen

ndia, Rajbeer Singh

thiopia, Hamsasew Moges

udan, El Waleed Abbas

TIES Technology Foresight Exercise, Gebze
November 23, 2007



one million cars using non fossil fuel...

10% of the public transportation using RE...

All metro trains will be running on Green Energy...

The renewable energy and technology prices cut by half by 2020...

5 million bicycles...

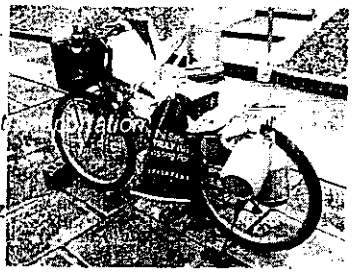
India net exporter of Cars and bicycles by 2020...

5 million new employment apportunities

Creation of 5 regions/clusters using RE...

0% taxation policy...

At least 100 schools using non fossil fuel based t[illegible]tation



TIES Technology Foresight Exercise, Gebz
November 23, 2007

GROUP B

Title: Technology Foresight practical exercise for Renewable Energies : A case of India

Rationale:

Limited fossil fuels
Rising prices of energy
Environmental pollution

"Enhancement of availability for cost efficient & ready-to-use renewable energies "

Objectives:

Designing common strategy between ministries (Mof Energy, Mof Technology,Mof Industry etc)

Improve and increase infrastructure to enhance the R&D activities in the renewable energy sector

Time Horizon: 2020 INDIA VISION

Time Duration: 24 Months

GROUP B

Resources:

Political	political leadership, political stability
Financial	Public- govt of India and state goverments
	Private- industries , NGO
	Foriegn- FDI, world bank, Asian development bank, UNIDO
Institutions	Research institutes , university, industry associations, social institutions
Infrastructure	Communication- contents, internet, tv, news papers, radio
	Demonstration and laboratory facilities
	Exhibition and seminar centers
	Meeting facilities
	Research facilities
	Equipments and material required for foresight
Human	Sociologist, scientists, engineers, industrialists, organizers
Cultural	*Intercultural communication specialists and trainings*

TIES Technology Foresight Exercise, Gebze
November 23, 2007 GREEN INDIA 2020

Possible Stakeholders:

Ministers and political leaders from ministry- energy, agriculture, S&T, finance
Planning commision members
Senior public official
Scientific experts
Decision makers
Plant managers
Sponsors
Professional associations
Engineers – thermal, electrical
Corporations- energy producers and distributors
Organisers
Social scientists
Industry associations, industry chambers
Civil society
Citizens

TIES Technology Foresight Exercise, Gebze
November 23, 2007 GREEN INDIA 2020

GROUP B

Organisation:

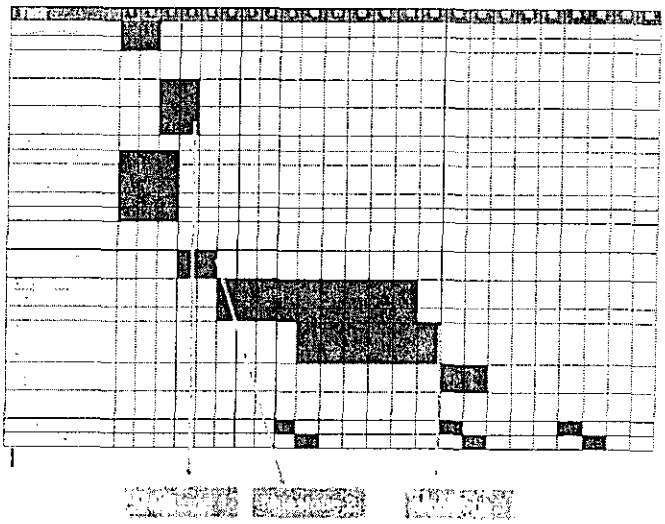
Steering Committee (1+12 members)
Project Management Team
Working Groups (6 of RES technology areas)
2 panels for each working group

TIES Technology Foresight Exercise, Gebze
November 23, 2007

Methods	Pros	Cons
Understanding		
Key Indicators	Available	-
Bibliometric	More information	Access Difficulty
Interviews (expert panels)	Quality knowledge gain	Time, cost
Scanning	Good quality	Scope
Recruitment		
Survey	Lot of segments	Expensive
Patent analysis	Accurate data	Limited info
Stake holders analysis	Diversity	Involvement costly
Generation		
Brainstorming	Very productive	Cost, time
Scenario	Good management	Cost
Delphi	Economic	Should be inclusive
SWOT analysis	Very productive	-
Mind mapping	Very productive	Training needed
Action		
Citizen panel	Get good understanding	Cost, time
Road mapping	Clear indication direction	Right leading needed
Survey	Get good understanding	Cost, time
Renewal		
Benchmarking	High quality	Availability of data
Impact analysis	Strong high quality	Cost

TIES
November 23, 2007

GROUP B

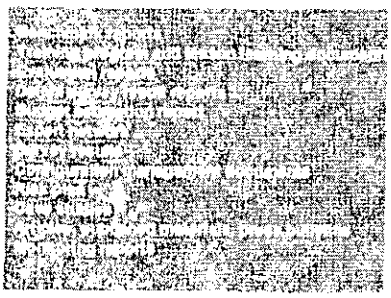


TIES

Technology Foresight Exercise, Gebze
November 23, 2007

GREEN INDIA 2020

Citizens panel result – 10 m
knowledge out of the foresight (0-22 m)
panel reports (8th 11th 14th interim 16m final report)
strategy documets of each panel (18 m)
infrastructure documents (18 m)
workshop reports (5m, 9m, 13m)
list of priority (0m)
website (6m)
TV program (20m)



TIES

Technology Foresight Exercise, Gebze
November 23, 2007

GREEN INDIA 2020

GROUP B

Ensure the allocation of the time to the participants and ensure their committment. (expenses, some work payed, and official committ letters)

Chairperson qualifications should ensure the appointment of the highly qualified and experienced person in foresight exercise and management.

Monitoring by the project management

Evaluation by external reviewer

Advertisement in mass media to ensure public awareness

Organising working group conferences and seminars to ensure the stakeholders awareness

Training the industry, SMEs and users to ensure the awareness

Multidisciplinarity

Coherence with the objectives

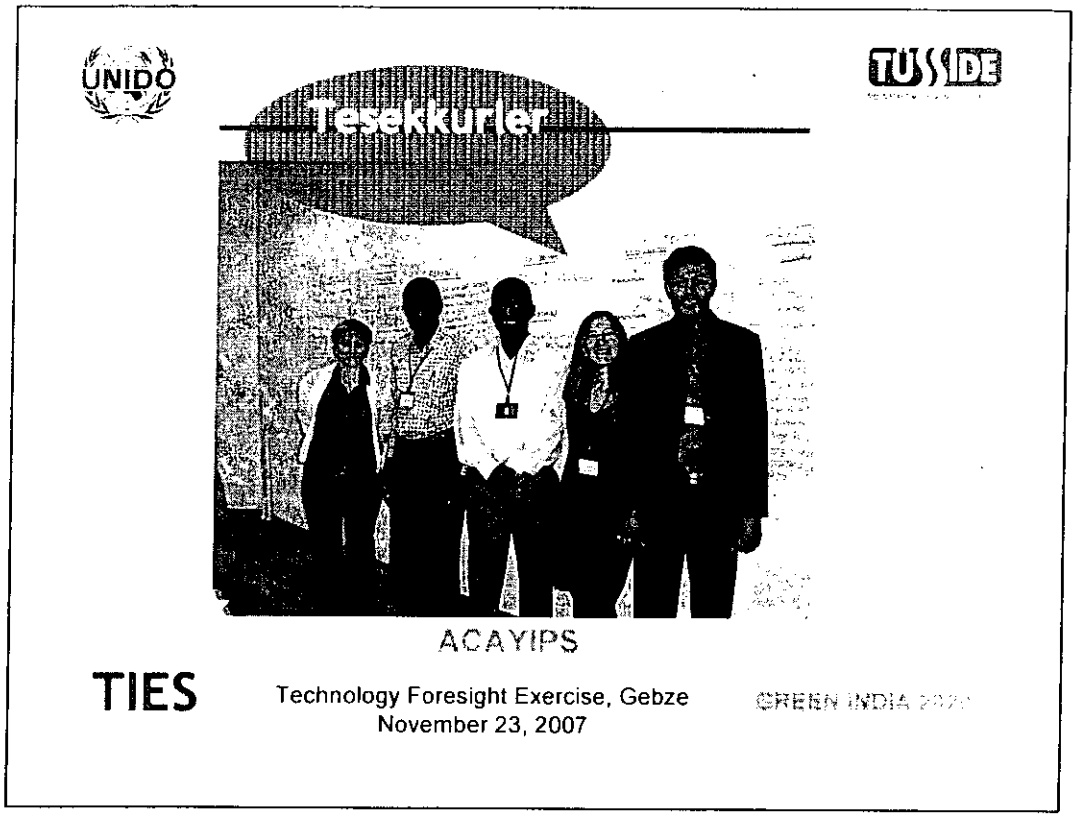
Quality of the stakeholder participation

(in profile as well as in action)

Quality of management

Level of contribution and collaboration within the panel.

GROUP B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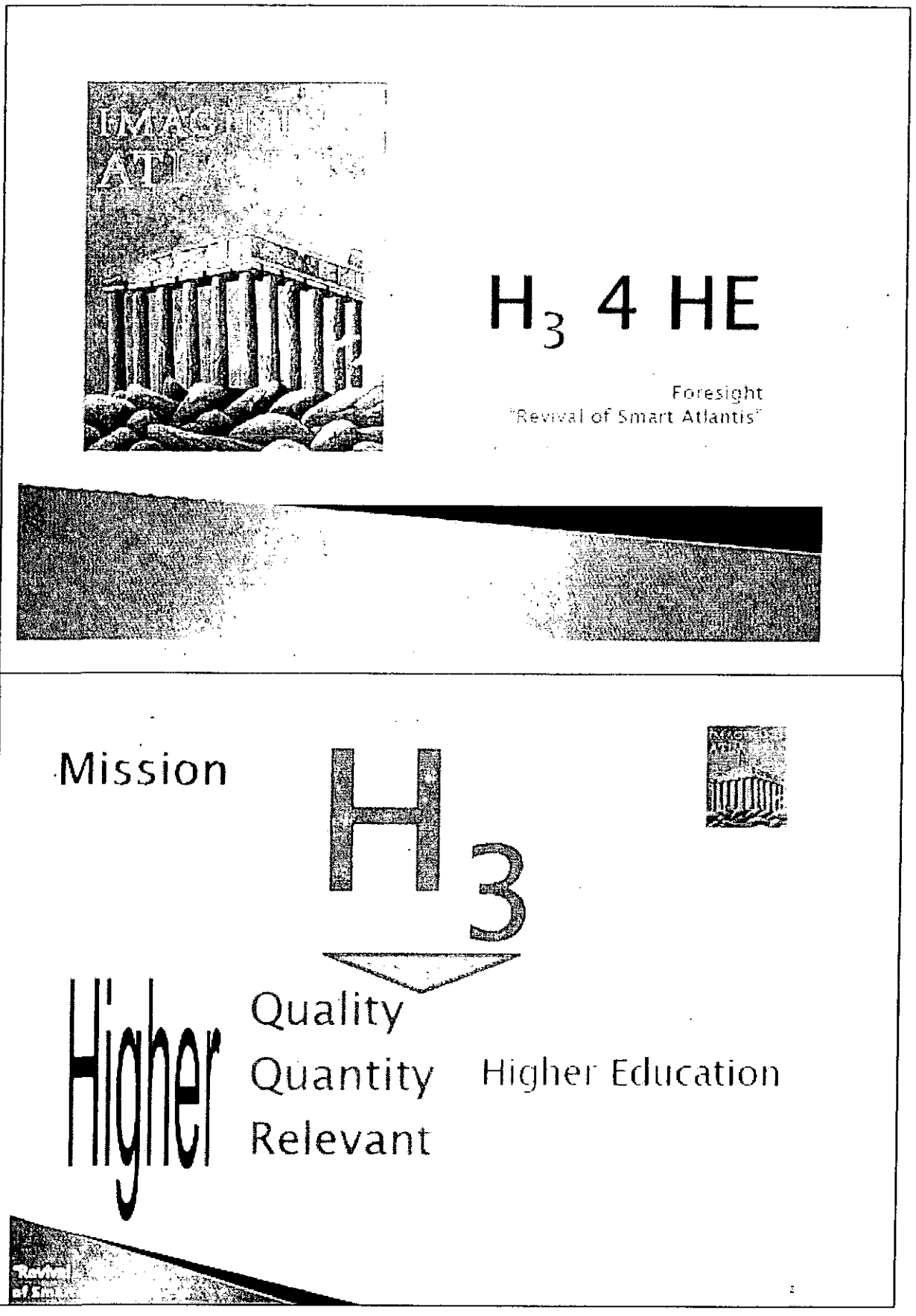
Technology Foresight Exercise, Gebze
November 23, 2007

Appendix B - Completed Projects (continued)

GROUP C



GROUP C

Basic Facts

ATLANTIS - a developing country

Time Horizon: 15 years

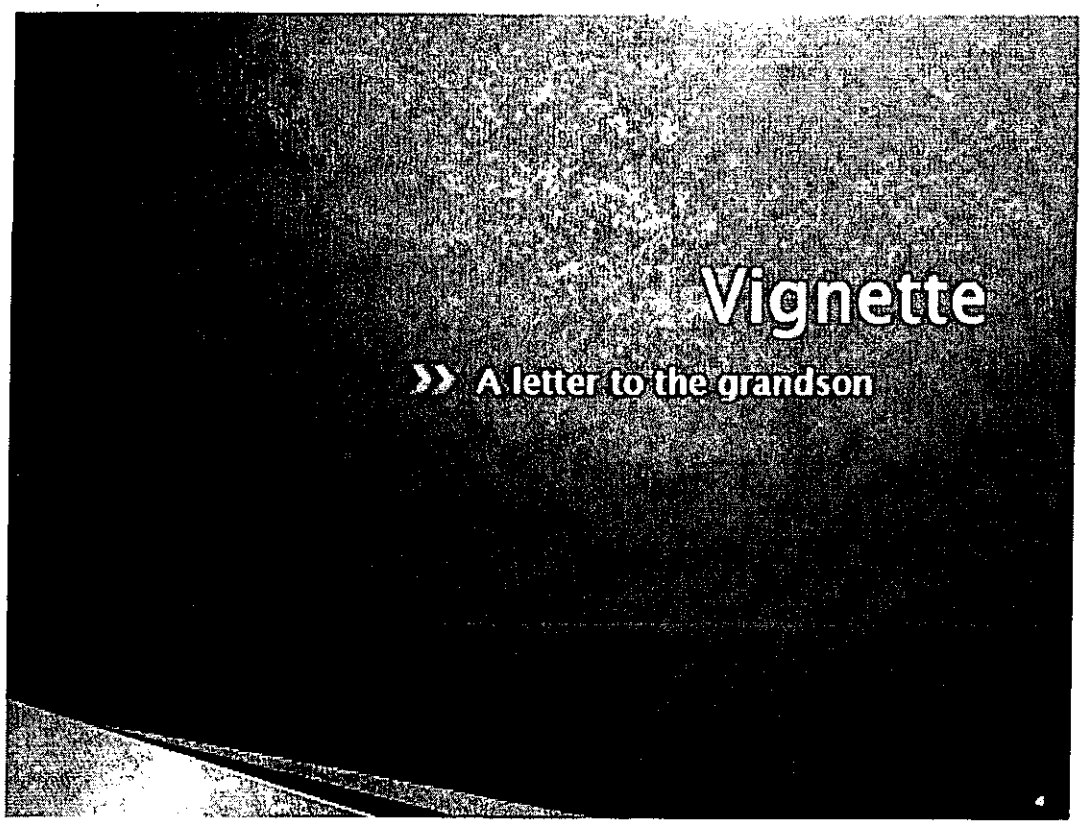
Project Timeframe: 16 months

4 months preforesight + 12 months foresight

Sponsor:
Ministry of Education

Executive Agency:
HE Council

Some common abbreviations:
- uni - university
- edu - education
- bus - business
- HE - higher education
- HS - high school
- /w - with



GROUP C

Vignette

Dear grandson,

I am finally at the end of my lifelong learning getting my 36th degree in Brain Management (although this may not be the last one ☺). I look forward to seeing you at the virtual graduation ceremony, that doubles as the initiation ceremony for the freshmen, among whom, as I understand, you will also be. It is great to see all my co-students again (though in 3D), since I have hardly been to the campus during the studies - I could do all studying remotely from my work, home and bingo club. In my youth... Well, what a life!!!

Speaking of work - I am due for a promotion at the Foresight Ministry, despite retiring soon, i.e. as soon as the last 10% of my brain is used up. I have decided to donate 70% of my brain capacity to productive use even during my pension - who could use all that during the travels I want to undertake. I hope you join me at one of them. C U soon!

Your grandfather
Atlantis, June 14, 2022

PS Mind the exams using the brain scan - there's no way to cheat them any more (but I have found one)!

Vignette

- My graduation scan was really hard for the examiners ....

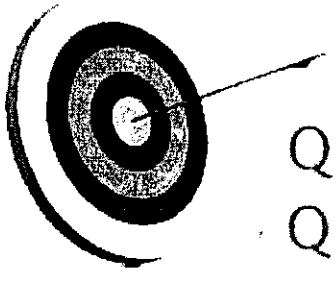
GROUP C

Setting the Goals

- Mission
- Objectives
- Measures

7

Objectives



QUALITY of education
QUANTITY of students
RELEVANCE of higher education to economy

5

GROUP C

Measures (1)

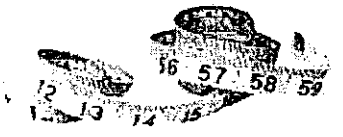
Quality

- Students per faculty
- Expenditure per student
- Indexed publications per faculty
- Amount of funds brought in from industry
- Dropout rate
- Valve of research infrastructure
- Ratio of PCs per student
- Ratio of books in library per student
- Income ratio of uni. students to high school students

Measures (2)

Inclusion (quantity)

- % of 18-25 yrs old population
- % of HS graduates able to pursue education
- Gender & ethnicity ratios
- Geographical distribution of HE institutions
- # of lifelong learning programs



Measures (3)

Relevance

Subject distribution of compound to country's need distribution

# of students employed during study

Spin-off companies emerging from uni-s' science parks & university work

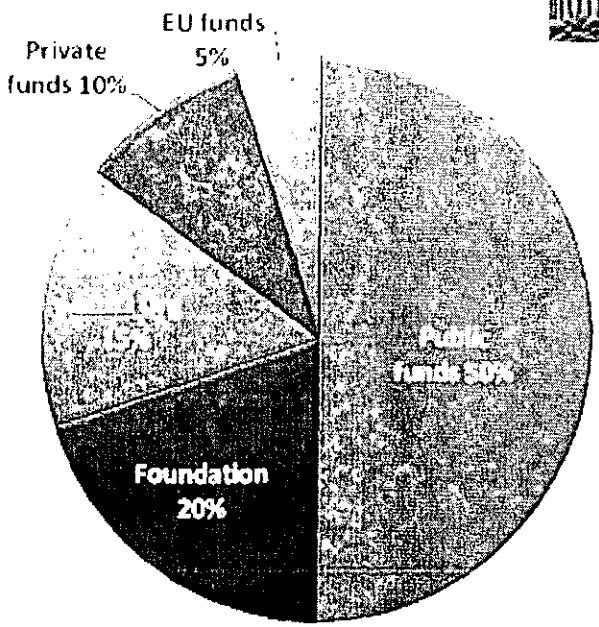
# of cooperative edu. programs w/ industry

% representation of industry in advisory boards of uni.-s

Business investment in HE

Budget

Total of 1 Million Euros



GROUP C

Groups

- Stakeholders
- Steering Committee
- Executive Committee
- Project Team

Stakeholders (institutional)

- Ministry of Education (sponsor)
- Universities
- Academia of Sciences, other R&D institutions
- Businesses
- Finacial institutions
- Professional institutions
- Trade unions
- Certifying bodies
- Educational foundations
- Student unions
- Non-governmental organisations
- Media
- Political parties
- Local, regional and municipal gov't-s
- International organisations

GROUP C

Groups

Steering Committee incl intn'l advisors *meeting quarterly*
Executive committee *meeting monthly*
Project team @ HE Council (*standing body*)
Experts *(meeting depending on methods chosen)*
- External
- Panels

Steering Committee

Minster of Education
Minister of Labour
President of the Academia of Sciences
A University Rector
2 from Business sector
1 from Financial institutions
1 from Professional institutions

GROUP C

Executive Committee

Chair (high level Min of Edu official, eg senior advisor)
Project leader (from the team)
President of the HE Council
Chairman of the funding foundation
Representatives of 2 universities (eg rectors)
Repr. Of a professional institution (eg Chamber of Commerce)
Foresight expert
ICT expert (w/ private business background)
Repr. of Student Unions

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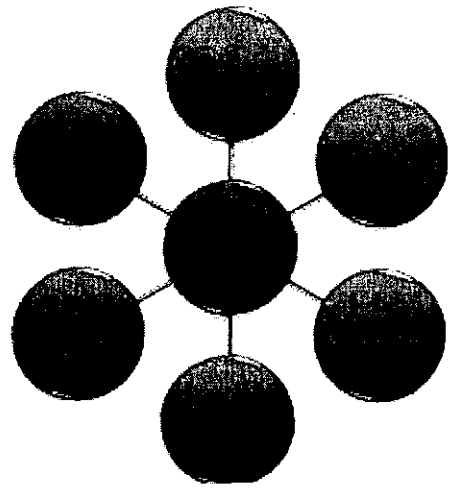
Project Team

- Project leader
- Secretary / Adminstrator
- 3 panel assistants
- Information officer
- Monitoring team
- Feedback team



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GROUP C

Panels & Methods

- Areas
- A Typical Panel
- Terms of Reference
- Mix of methods

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Panels

- Education & Training (incl ICT, distant and lifelong learning)
- Industry relations
- Infrastructure (eg physical, HR)
- Financing & policy
- Evaluation & quality assurance
- Science and R&D

GROUP C

A Typical Panel (1)

Recruited using:
- Symposium / conference (word of mouth)
- Ads / Public opinion calls
- Co-nomination
- R&D database

Assisted by
- external facilitator and
- technical secretary from the team

Nominations confirmed by
- The Executive Committee

A Typical Panel (2)

Consists of experts only from:

Universities	
Management	~30%
Academic staff	
Public sector	
Policymakers	~20-25%
Client side	
Industry / Businesses	~20-25%
Civil Society	~10%
Others	~10%

A total of 100%

... just checking ...

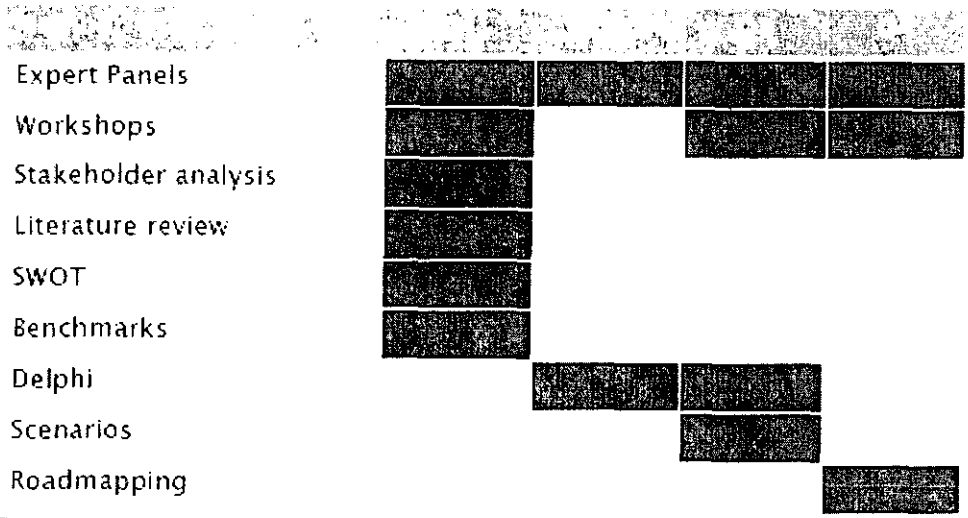
GROUP C

Terms of Reference

...will state
- Objective: report
- Deadlines
- Budget
- Methods to be used:
  - Environmental scanning
  - Delphi
  - Scenarios
- Ground rules
- Meeting place

To-Do lists
Relations to other panels
Extent of freedom to act
Coordination w/ team
Minutes to be kept
May invite external experts

Methods in Time



GROUP C

Environmental Scanning

- Drivers
- Trends
- Targets

25

Drivers

25

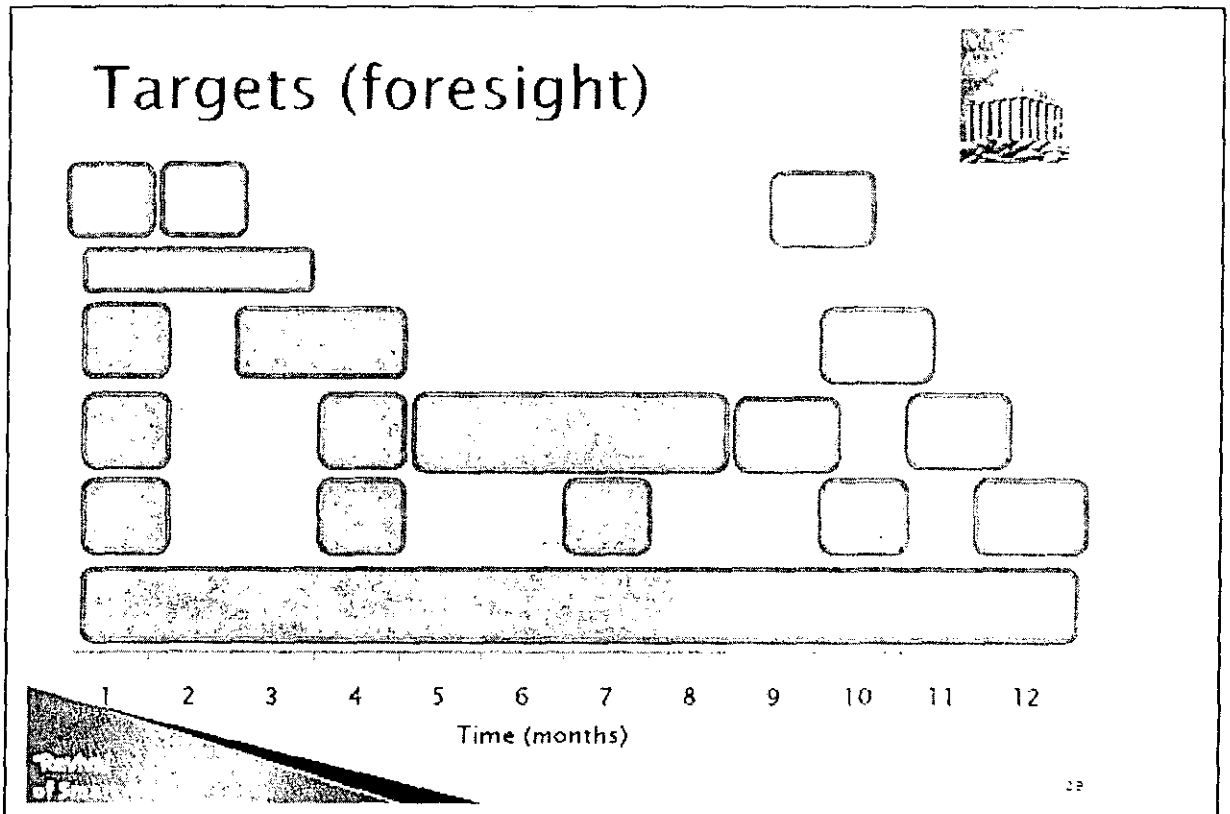
Trends

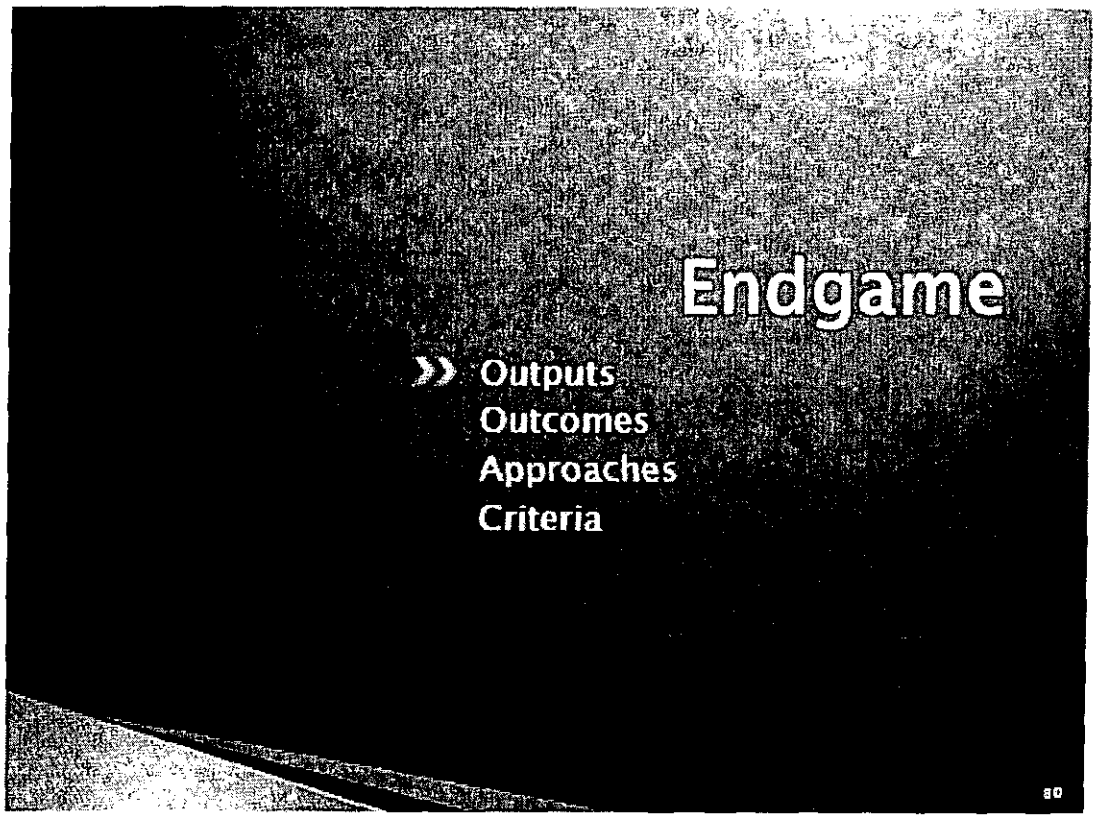
Braindrain
Unemployment
Illiteracy
Globalisation
Quality of edu decreases
GNP of others increases
Export manufacturing increases
Democratisation (or lack thereof)
Industry's demand on skilled labour
ICT applications in edu (their impact on society)

Targets (preforesight)

Proposal preparation
Approval of proposal
Finding neccessary people incl champion
Raise funds
Identify group (potential) members
Contact them
Prepare full project plan

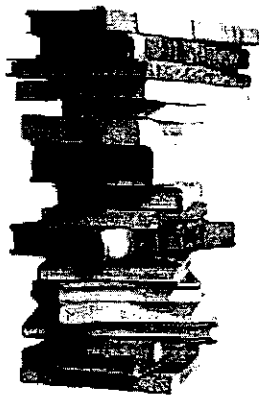
GROUP C


Targets (foresight)
1 2 3 4 5 6 7 8 9 10 11 12
Time (months)


Endgame
Outputs
Outcomes
Approaches
Criteria

GROUP C

Main outputs

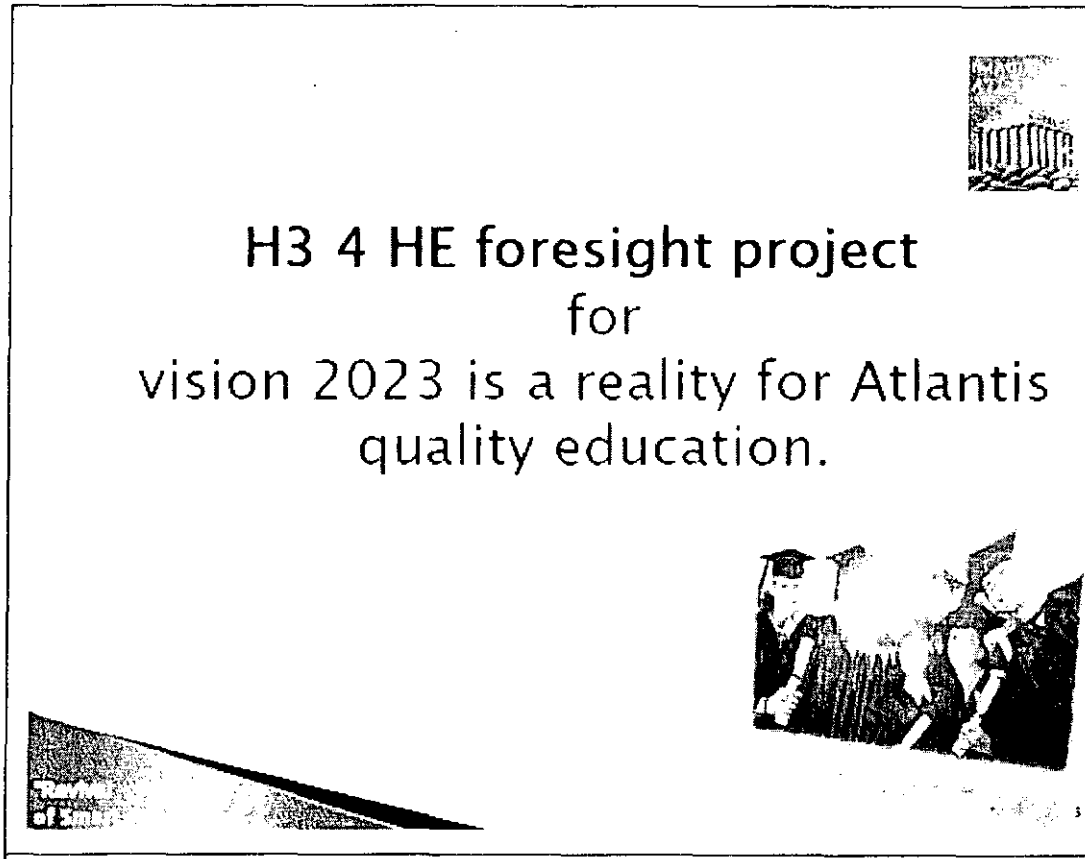


- Panels' reports
- Final project report
- Summary conference
- Policy reccomendations
- 3-4 scenarios
- Key drivers
- List of priorities
- Roadmap
- Website
- Expert networks
- Media coverage (TV, radio, print, electronic)

Outcomes, approches & criteria

Changes in policy	Continuous policy renewal cycles introduced	# of laws taking into accond these reccomendations
Awareness and changes in people's attitudes	Continuous media coverage	Sociological surveys show improvements in time
Increased uni intake	Decrease tuition fees; scholarships & study grants; much more gov't financed study plcements	# of students Balanced student mix More study opportunities Others as on slide 10
High quality of HE	Introduce effective national QA system. More investments in HE.	Same as slide 9 "Measures of Quality"
Edu system oriented towards econ and social development	Tax incentives to cooperate w/ uni-s. Encourage bus. Representation in uni-s governance. Formal program to improve links between uni-s a bus-s.	Uni output matches economic structure. Surveys show bus-s' satisfaction w/ HE. Private investment % in uni-s budgets.

GROUP C


H3 4 HE foresight project
for
vision 2023 is a reality for Atlantis
quality education.


Thank you
for your attention!
Groupwork by
Vidimantas Bumelis (chairman)
Kristjan Rebane (rapporteur)
Tariq Bashir
Mehmet Göktürk
Ikpesu Jasper Ejowwokoghene
Sisay Wedajo
skillfully facilitated by Ian Miles

Appendix C - Groups List

GROUP A

ADMIR DURAJ	KOSOVO
ANDREW ROZEIK	ESTONIA
EL FADIL ADAM AHMET BASHİR	SUDANESE
MENGISTU KIFLE GISELLASE	ETHIOPIA
MUSTAFA İNSEL	TURKEY
YASEMİN ASLAN	TURKEY
OBAKENG OKGETHILE	BOSTWANA

GROUP B

EL WALEED ABBAS MUHAMMED EL SAYED	SUDAN
HAMSASEW MOGES	ETHIOPIA
NERMİN SÖKMEN	TURKEY
RAJBEER SING	INDIA
VIDIMANTAS BUMELIS	LITHVANIA
VOLKAN SEMİH BAYRAKTAR	TURKEY

GROUP C

KRISTJAN REBANA	ESTONIA
LEYLA ARSAN	TURKEY
MEHMET GÖKTÜRK	TURKEY
SISAY WEDAJO	ETHIOPIA
TARIQ BASHIR	PAKISTAN
IKPESU JASPER EJOVWOKOGHENE	NIGERIA
KEREM KÜRKLÜ	TURKEY

Appendix D - List of Participants

List of Participants 1/4

Technology Foresight for Organizers
Training Course
19 - 23 November 2007 Gebze (Turkey)

Title	First Name	Last Name	Organization	Job Title	Country	E-Mail Address
Mr.	Admir	Duraj	United Nations Development Programme in Kosova	Advisor	ALBANIA	Admir.duraj@ks-gov.net
Mr.	Andrew	Rozeik	Executive Agency For Higher Education and Research Funding	Economy Expert	ESTONIA	info@arengufond.ee
Mr.	Dr. El Fadil Adam	Bashir	Ministry of Science &Technology and Energy Research Institute	Director	SUDAN	fadiladam@hotmail.com
Mr.	El Waleed Abbas Mohammed	El Sayed	Energy Research Institute	Researcher	SUDAN	Elwaleed61@hotmail.com
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Mr.	Kristjan	Rebana	Estonian Development Fund	Information Society Expert	ESTONIA	kristjan.rebana@arengufond.ee
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Appendix D (continued)

List of Participants 2/4

Technology Foresight for Organizers
Training Course
20 - 24 November 2006 Gebze (Turkey)

Title	First Name	Last Name	Organization	Job Title	Country	E-Mail Address
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Mr.	Rajbeer	Singh	Center for Studies in Science Policy	Research Fellow	INDIA	rajbasera@gmail.com
Mr.	Sisay	Wedajo	Ethiopian Science and Technology Agency	Team Leader	ETHIOPIA	yosephsisay@yahoo.ca
Mr.	Tariq	Bashir	Pakistan Council for Science and Technology	Director	PAKISTAN	drtariqbashir@yahoo.co.uk

Appendix D (continued)

List of Participants 3/4

Technology Foresight for Organizers
Training Course
20 - 24 November 2006 Gebze (Turkey)

Title	First Name	Last Name	Organization	Job Title	Country	E-Mail Address
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Ms.	Yasemin	Aslan	The Scientific and Technological Research Council of Turkey(TUBITAK)	Assistant Expert	TURKEY	yasemin.aslan@tubitak.gov.tr
Mr.	Kerem	Kürklü	Temsa-RD and Technology Inc.	Project Engineer	TURKEY	kerem.kurklu@temsa-argetek.com.tr

A picture from the course