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07996

Distr.
LIMITED
UNIDO/EX.38
20 April 1978
ENGLISH

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

CONSULTATION MEETINGS ON THE IRON AND STEEL INDUSTRY.

REPORT OF THE WORKING GROUP MEETING ON IRON ORE*

Vienna, 3-5 April 1978

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id.78-2132

1. Mr. A. Hacini, Head of Negotiations Section, opened the Meeting. A full list of participants is attached, including 9 from developed countries, 7 from developing countries, and 4 from international organizations. Mr. Hacini referred to the request made by the Consultation Meeting in February 1977 for a review of iron ore problems and said that the conclusions of the present meeting would provide the basis for a report on this subject to the Second Consultation Meeting in January 1979. The Working Paper (UNIDO/EX.35, 24 February 1978) circulated to participants had asked a number of questions which would form the Agenda for the Working Group Meeting.

2. Mr. Anibal Gomez, Secretary-General of ILAFA, was elected Chairman of the Working Group and Mr. C. Dufresne, President of SIDBEC Normines Ltd., Co-Chairman.

3. Mr. B.R. Nijhawan, Chairman of the UNIDO Task Force on Iron and Steel, made a statement relating to the work which the Secretariat had undertaken in preparing the Working Paper. It would be necessary to make clear-cut recommendations on the matters raised in the Paper for submission to the Second Consultation Meeting.

4. The Meeting agreed to proceed with the agenda items as set out in the Working Paper.

Agenda Item A. Iron ore resources, and prospects for demand and supply

5. In a discussion of the reserves it was said that the share of world iron ore reserves held by developing countries might be greater than the 20 % quoted in paragraph 4 of the Working Paper. The tonnage of ore in the estimates of effective reserves depended on the price level and therefore on the economics of the exploitation of particular deposits. There was also a need to differentiate between the types of ore in the reserves, referring for example to lump ores, sinter fines, or pellet material.

6. Many developing countries possessed extensive reserves of rich ores. Nevertheless their customers should be encouraged to use not only such ores but also the poor grades in order not to exhaust the rich ore resources too rapidly. Against this it was pointed out that enormous reserves of ore of all types exist which had not yet been exploited. The requirements of the final consumer must always be the important factor controlling the types of ore to be supplied.

7. In a discussion of the supply and demand for ore in 1985 it was pointed out that the demand figures were related to the expected production of steel and were influenced at the present time by the recession in the steel market. It was considered that 1,070 million tons steel production by the year 1985 was unlikely to be realized and that an estimate of 950/1000 million tons

was more reasonable, although the figure was very uncertain. The ore estimates should be reconsidered with two possibilities in mind: a) that there would be an early major revival in steel production in the industrialised market economy countries and b) that there would be no such revival.

8. On the question of the likely supply of iron ore in 1985 delegates gave their views on the figures included in Table II of the Working Paper. It was agreed that such estimates of potential extra supply were subject to a wide margin of error in view of the greatly varying stages of preparation to which projects throughout the world had advanced. Moreover the low state of steel demand had itself caused many delays in the planning and financing of new orefield development.

9. In a discussion of the various country estimates included in Table II the following comments were made:

35 million tons for Canada was too high for 1985 but might be realized by the year 2000.

30 million tons was possibly high for USA but given the necessary demand for steel the figure might be realized.

For Latin America, the total of 125 million tons potential extra production might be raised to 131.

The Arab countries in Africa, particularly Algeria and Libya, could be expected to add a potential between 25 and 40 million tons a year not already included in Table II.

For India the figures included were already committed and a further 2 million tons a year could be added to be effective by 1979/1980.

The prospect for supplies from Australia suggested that 60 million tons could be taken as a theoretical figure but the current view would suggest a lower practical figure, influenced by the world demand position for steel. Nevertheless this recognized the progress being made in steel production by the developing countries, with their consequent increasing requirement of ore.

For Eastern Europe and USSR the 12 million tons estimate was thought to be low and should be looked at again in relation to the expected steel production growth in GMEA countries.

10. It was recognized that the relation between demand and supply of ore should take account of different types and the different applications of ore in the steel industry since it seemed possible that in the early 1980's there might be a tightness in supplies of sinter fines and a relative easiness in supplies of pellets. However it seemed clear that as a whole ore supplies would not be a limiting factor on steel production in the year 1985.

Recommendations

11. UNIDO should strengthen its relations with UNCTAD, ILAFA, AISU, APEF and all other institutions concerned with iron ore reserves, production and distribution with a view to presenting to the Second Consultation Meeting an up-to-date appraisal of the reserves including as much detail by types as possible and indicating the stages of exploration. Table II in the Working Paper should be supplemented with information on the stages reached by the respective orefield development schemes, and on other orefields recently exhausted.

Agenda item B. Investment costs and the magnitude of the investment problem

12. The meeting discussed the investment cost estimates for iron ore mining, processing and pelletizing set out in table V of the Working Paper. It was agreed that the figures were reasonably representative for plants constructed up to a year or two ago but that for current development estimates showed figures rising to as much as 50 % above the 100 dollars per annual ton quoted in the Paper for pelletized products. In this connection it was important to distinguish between expansion of existing plants and establishment of new plants on greenfield sites.

13. On the other hand, the pelletizing plant itself made up a large proportion of the cost estimates presented. Figures for recent projects which included no more than mining, crushing and screening gave a capital cost of 45 dollars per annual ton while the inclusion of beneficiation plant brought the figure up to 75 dollars per annual ton.

14. It was suggested that recent discussion of steelworks projects in developing countries had given unnecessary emphasis to the production and use of pellets. It was important to look critically and realistically at the best way to exploit an ore field deposit producing lump ore, sinter feed or pellets according to the technical condition of the ore, the steelmaking processes in which it was to be used, and the market situation.

15. It was also considered that for developing countries it might be appropriate to carry out orefield development or establish steel making plants not necessarily on a large scale but appropriate to their resources and market needs. There were many possibilities of small scale development which ought to be examined since large units run at low rates of output were expensive. There should also be a review of the optimum balance between machines and labour for small scale developments bearing in mind economic and social considerations.

16. At the same time it should be recognized that small scale ore field projects might have a capital cost per ton of output greater than for large scale operations.

17. In a discussion about the possibility of co-operation between neighbouring developing countries sharing the same geological deposits it was pointed out that an essential factor would be the construction and use of a common railway line and other infrastructure installations. The co-operation would primarily depend on national goodwill. Possible examples related to Senegal and Mali, Bolivia and Brazil, Liberia and Guinea.

18. A developing country considering adding to the value of its ore production for export by pelletizing or other forms of processing should first consider the market to which it wished to deliver the products. Other relevant points included the capital cost of the various stages including the foreign exchange elements.

19. Furthermore a developing country should consider the economics of mining and processing its own ore for local use in relation to the cost of buying suitable supplies from established producers, again taking account of the capital costs and foreign exchange elements involved. The broader social implications of developing local resources together with an assessment of the security of supplies also needed consideration.

20. The importance of good research institutes and test laboratories with knowledge of local conditions was stressed in guiding the technical aspects of the choices indicated in paragraphs 18 and 19. There was a need for intensive early feasibility studies of the various possible alternatives up to the production of pig iron or sponge iron.

21. A decision to continue ore processing through to the pelletizing stage was likely to be justified only if the ore were of such a type as to need very fine grinding for the purpose of beneficiation, or where it was intended to use pellets locally for direct reduction processes. Otherwise the supply of lump ore or sinter fines was likely to be more justified.

Recommendations

22. UNIDO should revise Table V in the Working Paper to bring the figures up to date and differentiate further between various stages of mining and processing.

23. UNIDO should identify possible areas of international co-operation among countries sharing the same geological deposits and submit proposals for action to the Second Consultation Meeting.

Agenda Item C. The market structure and access to markets

24. Some concern was expressed at the possibility that since much of the world supplies of iron ore particularly sinter fines was being committed on long term contracts there could be difficulties for developing countries in securing sufficient supplies of sinter feed for use in blast furnaces. It was further pointed out that some admittedly pessimistic estimates recently made of ore supply and demand in 1985 indicated a total surplus of 100 million tons in 1985 taking account only of future supplies from committed development schemes and making no allowance for supplies for example from Carajas and Gabon. Within this estimate there was no excess of fines, although it was equally plausible that many development projects could be activated by that time in the right demand conditions and would provide ample high grade sinter feed.

25. In Western Europe and USA the steel industry was not likely to show rapid growth and there was little reason to expect that their demands for sinter feed would create difficulty in satisfying the needs of developing countries.

26. Looking further ahead to the year 2000 it could be said that adequate ore reserves existed and the continuing process of exploration was expected to identify further deposits. There was time for their exploitation to be carried out in relation to the evolution of demand.

27. The development of new ore resources was being increasingly undertaken and guaranteed by national governments since the risks, technical, commercial and political, had now become such an important feature that independent mining companies or consumer companies were unable to bear them. The influence of governments in developing countries wishing to purchase regular supplies of ore could in these circumstances be important in assuring access to supplies.

28. It was agreed that there was scope for developing countries to co-operate in making their purchases of iron ore and it was also pointed out that much co-operation already existed between developed and developing countries on all aspects of steel works development including orefield development and the related commercial questions of purchase and supply of ore.

29. In a discussion of the question whether developing countries buying ore on a small scale should combine their programmes to build up total tonnages which were more interesting to large scale producers it was pointed out that there could be difficulties on an international scale but that the proposal was worth considering for a number of companies within the same country. One possible disadvantage of the proposal might be that companies do not all need the same type of ore and that from time to time shipments of ore which were not entirely suitable for an individual company's requirements still had to be accepted and shared by the participants in the scheme. Nevertheless the proposal was worthy of further study to clarify the technical difficulties and to assess the forms of co-operation which would need to be created to make a scheme effective.

30. On the related topic of the practicability of combining the requirements of a small scale buyer with those of a large scale buyer it was considered that although the small buyer might be at a disadvantage in relation to the large buyer when shipments of ore were not exactly suitable for the needs of both parties there were advantages to be achieved in taking a two-ports discharge of a large single shipment which at the present time could be arranged at very low freight rates. Geographical considerations in arranging shipping to convenient ports might present difficulties but in selected cases the operation could yield useful benefit. Each possible case needed to be studied and assessed on its merits.

Recommendations

31. UNIDO should assess the market for lump ore, sinter fines and pellets in 1985 and 2000 in order to present to the Second Consultation Meeting a more precise appraisal of the problem of access to markets and guidelines for future orefield development.

32. UNIDO should review experience of co-operative buying of iron ore nationally and internationally and formulate proposals to the Second Consultation Meeting for possible action by developing countries.

33. UNIDO should seek, in co-operation with other organisations concerned, to formulate criteria for decisions concerning the exploitation and processing of local ore reserves for domestic use and export.

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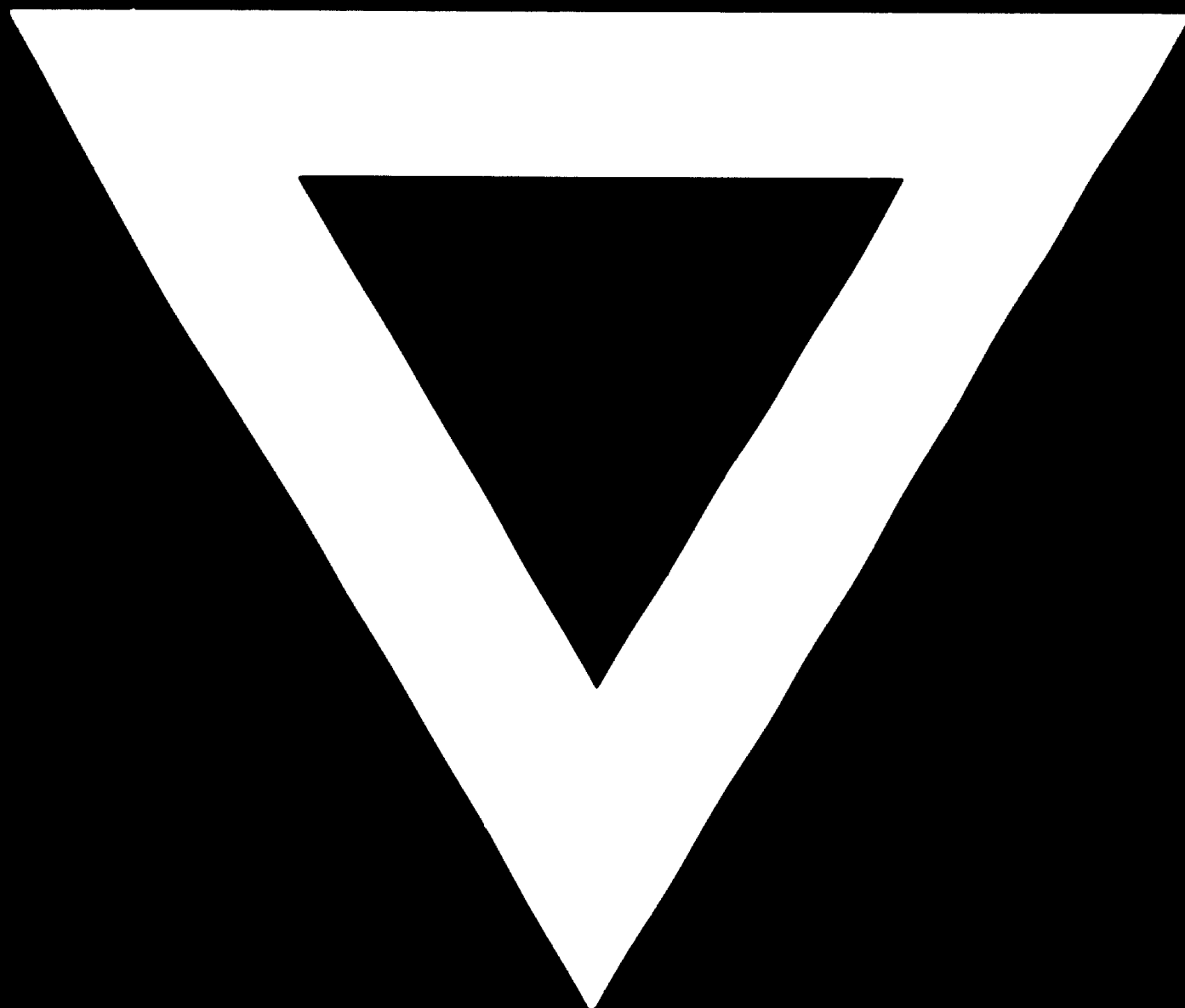
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