INAUGURAL (1ST) MEETING

HELD AT

DEPARTMENT OF PETROLEUM, MOPC&F, SHASTRI BHAWAN, NEW DELHI

ON

JUNE 22, 1981

1st

~~No. L-43013/3/81-Gen.~~
Government of India
Ministry of Petroleum, Chemicals & Fertilizers
(Department of Petroleum)

...

New Delhi the 16th July, 1981.
(17-7-81)

To

1. All the Members of the Committee
2. Shri V.S.Bhaskar Rao, Assistant Director, Regional Research Laboratory, JORHAT.
3. Shri S.P.Bhattacharya, DDG, DGTD, New Delhi.

Sub: Brief Record of the 1st Meeting of Scientific Advisory Committee for Department of Petroleum

Sir,

I am directed to forward herewith a copy of the brief record of the above meeting held on 22.6.1981 in the Department of Petroleum, New Delhi.

Yours faithfully,

T N Parameswaran

(T.N.Parameswaran)
Under Secretary to the Government of India
(Tel:No.389297)

Copy with a copy of enclosures forwarded to: to:

1. All JSs
2. Adv.(Refineries)
3. Adv.(Petro-chemicals)
4. Private Secretary to Secretary (P)

T N Parameswaran

(T.N.Parameswaran).
Under Secretary to the Government of Indi
(Tel.No.389297)

Brief Record of the 1st Meeting of Scientific Advisory Committee for Department of Petroleum

VENUE: Conference Room, Department of Petroleum Shastri Bhavan, New Delhi.

Date: June 22, 1981

(A list of the participants is attached)

1.0 Inauguration by Shri P.C.Sethi, Minister PC&F

The Minister while welcoming the Members stated that his Ministry attaches great importance to this Committee, whose advice will be taken very seriously. He emphasised that the Committee is free to discuss all aspects of processing and utilisation of hydrocarbons. He further emphasised that the Committee will have access to the various papers of the Ministry and would also be free to visit whichever establishment under the Ministry it desires.

A copy of the formal speech is enclosed.

2.0 Opening remarks of Prof. MM Sharma, Chairman of the Committee.

Prof. Sharma very warmly congratulated the Ministry, particularly Shri P.C. Sethi for constituting this Committee at such a momentous time in the history of petroleum and petrochemical development in India. He stated that this was perhaps the first case in Govt. of India where an economic Ministry had ventured to establish a Scientific Advisory Committee. Several points of general interest were raised and in particular the utilisation of by-products (better called co-products) from naphtha/gas cracker, cat crackers, refineries, etc; need to ermark LPG for vital chemicals; need to broad base fuel refineries; alternative feedstocks and materials for lubes and synthetic detergents, etc. were emphasised.

A copy of the formal welcome address is enclosed.

3.0 Remarks from Shri L. Kumar, Secretary, Ministry of Petroleum.

Shri L. Kumar reiterated that the Ministry attaches the highest importance to this Scientific Advisory Committee and that the Ministry will be happy to provide the required documents and would also be happy to support research projects recommended by the Committee. He did not foresee any financial difficulties for supporting suitable research programmes.

4.0 General remarks by Members

The Chairman invited the Members to give their overview on various aspects of hydro-carbon processing and utilisation. The following important points emerged and these were subsequently summarised by the Chairman.

4.1 Catalyst development in the country has made great strides on scientific front but its commercial utilisation has been seriously handicapped for want of specialised catalyst making facilities. There is an urgent need to establish such a facility, not only for catalysts manufacturing but also for prolong testing.

4.2 We should develop effective mechanism for technology absorption.

4.3 We should be prepared to take calculated risk in utilisation of indigenous technology.

4.4 We should evolve workable strategies for transportation of indigenous and imported crude through, for instance flow modifiers.

4.5 Although chemicals industry is traditionally energy conscious, there is great scope for energy saving and we should endevour to have strict energy audit in all major processing operations.

4.6 Different alternatives for converting coal, fuels and chemicals should be carefully examined. For instance, should it be via synthesis gas and methanol or synthesis gas - Fischer Triphs

4.7 Processes should be compared with international background and activities to even export technology.

4.8 There is need to acquire expertise in design of certain operations of refineries, notably hydroprocessing lube refining, etc. Equipment development should attract considerable attention.

4.9 We should have authentic long range R&D status reports.

A large number of Committee members reaterated great importance of modus-operandi for implementation of recommendations.

5.0 Evaluation of Technology of EIL/IIP for benzene/ toluene recovery from reformers at BPCL Bombay and Cochin.

Various aspects of this matter were discussed at considerable length and it was the considered opinion of the Members that we should accept this technology package, for the following reasons:

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5.1 Alternative processes were considered and it was clear that the process recommended in this package was more attractive.

5.2 Pertinent data on equilibrium for solvent extraction and distillation, which are most crucial parts of the technology have been generated and rationally analysed and co-related.

5.3 Equipment performance data have been analysed and rationally co-related.

5.4 Adequate data exists for a rational scale-up.

5.5 Expertise exists for detailed engineering package.

5.6 If required, technology for the manufacture of solvent, sulpholane, can be developed.

5.7 Risk involved in this technology is very limited and definitely worth taking.

6.0 Higher alphaOlefins

This was discussed in a preliminary way and the need for this was considered and following comments were made:

6.1 The new plants established are essentially based on ethylene and therefore assist in the overall Economics of acetylene plants.

6.2 We have problems of feedstock for LAB and this process can give very high yields of C_{12} alpha olefins.

6.3 Potential uses for lower and higher alpha olefins probably exist.

6.4 LUBE based stock position is not comfortable in India and synthetic lubes based on higher alpha olefins and other products may be attractive.

6.5 Synthetic fatty alchols can be manufactured via oxo processes.
It was decided to have a more detailed discussion on this subject in the next meeting.

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7.0 Product mix for gas cracker at Usar

A preliminary discussion took place where the logic for the suggested product pattern was briefly discussed. In particular the emphasis on ethylene utilisation for LD/HD polyethylene was supported along with the strategy of not incorporating PVC within the complex.

It was decided that this would be taken up for detailed discussion in the next meeting of the committee.

8.0 Meeting with Prof. Nurul Hasan, Vice President, CSIR

8.1 At the Minister's invitation Prof. Nurul Hasan met the Committee in the afternoon. He emphasised the role of CSIR and importance of R&D in the next decade. He stated that CSIR labs will be happy to interact with the Ministry and the Committee.

8.2 The manufacture of hydrocarbon and chemicals from various types of coal including lean coal, lignite, and underground coals was emphased by him. He also narrated his experience and his recent visit to USSR.

SCIENTIFIC ADVISORY COMMITTEE, DEPARTMENT OF PETROLEUM, MINISTRY OF PETROLEUM AND CHEMICALS, FIRST MEETING ON 22ND JUNE, 1981 - WELCOME ADDRESS BY PROF. M.M.SHARMA.

It is a matter of great pleasure for me to extend a cordial welcome to all of you who have made it convenient to attend this inaugural meeting. We are indeed very happy that Shri Sethi, Minister of Petroleum and Chemicals, has graced this meeting and I should like to express our gratitude to him. This shows the deep commitment of Shri Sethi and Shri Lavraj Kumar to this Committee. I should like to compliment the Ministry in taking this bold and imaginative step in establishing this committee.

This is perhaps the most exciting time in the history of petroleum and petrochemical industry in India where momentous decisions are in the process of being taken to judiciously deploy our hydrocarbon resources. With the availability of the natural gas and the associated gas we are on the threshold of taking up projects of world scale and this is certain to change the Indian Scenario. It is of utmost importance that this extremely valuable resource is expeditiously and optimally utilised. We are also on threshold of having large scale plants for benzene and xylenes. Thus the major building blocks for the organic chemical process industry should be available in good quantities and at prices comparable to international prices.

We will soon have a number of additional cat-crackers and therefore fairly large quantities of propylene and C_4-olefins would be available.

It is highly desirable for us to apply our minds to the utilization of all the resources and turn them into valuable products required by the society. Since these resources are depleting type it is even more important for us to use every kilo of the product in an optimal way.

The utilization of by-products of all naphtha and gas-crackers, and cat-crackers is of great importance. We should consider recovery of acetylene from all our naphtha and gas-crackers and we might be able to tap more than 10,000 tpa of this material and save large amount of power which would have been otherwise required to make carbide. The utilization of C_5 and higher fractions requires immediate attention.

While conceding the requirement of LPG for fuel purposes it is very important to point out the dire need to tap additional sources for isobutylene and butadiene so that items of mass consumption, namely rubbers and engineering plastics, can be made available at attractive prices.

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Engineering plastics, including thermosets, have a vital role to play in view of ever escalating costs of energy which is consumed in a big way in making metals whose density is relatively very high. We should have a basic policy on this issue as distinct possibilities exist to make a major impact even in housing sector.

Ethylene, so far, has been essentially for making polyethylene (LD and HD), PVC and polystyrene. However, with ethylene to be made from ethane in a massive way time is opportune for us to examine the possibilities of making higher olefins by controlled polymerization so that alpha-olefins in the range of C_6 to C_{18} can be advantageously made available in a big way for plasticizer alcohols, synthetic fatty, linear alkyl benzene, etc.

Our refineries have largely functioned as "Fuels Refineries" and it is highly desirable for us to examine the possibilities of utilising hydrocarbons more judiciously. For instance if both benzene and hydrogen are available through the aromatics plant then there is no reason why cyclohexane should not be made at that location rather than at another location where a separate hydrogen plant will be required.

The need to process crude oil fractions differently exists in view of the peculiar demand pattern in India compared to Europe and U.S.A. We may have to devise ingenious means to tackle this problem.

The position of lube oils and additives is also not very comfortable and we are "forced" to process certain types of crudes. We should examine alternate strategies.

There are many avenues available to utilise our hydrocarbon resources and conserve energy and we have a group of very competent persons in this committee to advise the Ministry. We will all look forward to our deliberations.

May I once again take this opportunity to thank Shri Sethi and Shri Lavraj Kumar most sincerely for their great commitment to the cause of hydrocarbons ?