

SUMMARY

This section of the *CONFERENCE ON COMPOSITION OF TRANSPORTATION SYN-FUELS* is intended to highlight discussion topics, action items, etc., considered to be of most immediate importance to a *national synthetic fuels development effort*. The extremely abbreviated statements which follow are not intended to reflect either unanimous or even majority opinions; they do reflect important points. In order to gain a better feeling for the exact flavor and context in which each arose, the reader is invited to study the *Topical Consensus* and *Conference Overview* sections and, further, to review in detail the actual *Conference Proceedings* upon their publication in early 1979.

Nontechnical and Institutional Factors

- Much good work has been done by government and industry that has brought energy technology and solutions to their present status.
- As a technical group, the synthetic fuels community has been talking to itself at conferences such as these and desperately needs a communications mechanism that can reach others who impact goals, directions, and actions such as the public and Congress.
- An organization should perhaps be created whose mission is to bring the synthetic fuels situation to the attention of both the *public* and the proper *congressional* authorities. The next conference on this subject should be highly publicized and held in the immediate Washington, D.C. area at a time during which congressional representatives and their staffs can attend.
- Synthetic fuels technology has reached the point that specific, well-founded facts can be presented to the public and to Congress by means of both the above-mentioned *organization* and *conference*.

Technical Factors

- A very promising alternative to the expensive hydrotreating of shale oil and coal syncrudes entails *splitting the barrel*; combining the *lighter* materials from coal and shale syncrudes and refining them into a *broadcut fuel* compatible with future advanced engines while utilizing the *heavier* synthetic materials in coal-oil mixtures usable in *nontransportation* powerplants.
- If current transportation fuels specifications are taken as the requirements for future alternative fuels, there is simply *no need for further R&D* in this area.
- It is believed that the above is not apropos; therefore re-evaluation of these fuel specifications in terms of anticipated *nonpetroleum resource* utilization is mandatory.
- It is time to initiate a properly organized program to investigate the potential for off-spec and variable-quality spec fuels in terms of extending existing engine technology.
- Composition and performance characteristics of a family of *alternative synthetic reference fuels* should be defined at the earliest possible time.
- There is an immediate need for the definition and formulation of a broadcut reference fuel or family of such fuels.
- Powerplant technology R&D poses no barrier to the *accelerated* construction and operation of syncrude conversion plants. The first of these should be activated as soon as possible so that investigators can obtain representative fuels with which to work the fuels/engines problems.
- Conventional automotive engines are likely to continue to dominate the domestic highway vehicle scene for the next *two decades*.

- The development of energy-efficient fuels which interface with energy-efficient, fuel-tolerant engines will, without doubt, be an iterative exercise.
- Initial utilization of synthetic fuels in *transportation* powerplants as opposed to *stationary* powerplants remains argumentative.
- R&D on synthetic fuels composition should be oriented around *environmental* considerations to include exhaust emissions, safety in handling, toxicity, etc.
- *Commercial-scale* conversion plants for oil shale and coal in our western states probably will *not be tolerated* if present state environmental policies are continued.
- The United States should capitalize on *existing* conversion system technology which has been *proven* and *used* in other parts of the world.
- Synthetic fuels can only be made cost competitive with petroleum by operating *full-scale* syncrude conversion modules.
- Sufficient laboratory and pilot-scale R&D has been completed to warrant *significant commitment of private and federal funds* towards full-scale operations.
- The petroleum crude-to-syncrude transition period (1980-2000) should utilize *existing refineries* rather than dedicated synthetic fuel production refineries.
- The price of domestic synthetic fuels may not be competitive with imported oil in the foreseeable future.
- DOE, DOD, and DOT have openly expressed a willingness to cooperate in generating *transition scenarios* for synthetic fuels.

- The PARADO program will continue to provide an excellent example of positive, quick-response utilization of domestic oil shale in the production of MIL-Spec fuels.

Key General Points

- Future alternative fuels are going to be *more expensive*, but should nevertheless be of as high a quality as is practical.
- At the outset, domestic refiners are likely to resist initiation of syncrude refining or blending to the point of using *petroleum crudes inferior to synthetic crudes*.
- For the next 50 years, both technical and political efforts on synthetic fuels development must be aimed at a proper balance between *disruption of our environment* and *disruption of our socioeconomic stability*.
- There should be a more extensive and better coordinated interchange between the military (users), engine manufacturers, and the processors with regard to testing and availability of fuels from oil shale.
- University R&D could best serve the national interest by emphasizing polynuclear aromatic hydrocarbon emissions, analysis for nitrogen and oxygenated compounds, and various metallic elements that are expected to be present in nonpetroleum fuel products.
- The Federal Government should immediately take action to (1) review present synfuel processes, (2) evaluate the process options, (3) select a process, and (4) assure construction of a commercial-size plant.