
**An Assessment of the Reviewer's Analysis and Comments in the AERI Review
of the JETRO/METI Report: ABL Feasibility Study – Phase 1**

This assessment addresses whether or not the reviewer:

- 1. Provided required proof for his/her statements and conclusions?**
- 2. Showed understanding what is claimed and what was performed?**
- 3. Did proper diligence in selecting and quoting references?**
- 4. Performed the review in an objective, professional manner?**
- 5. Left no (significant) doubt as to the value of the review?**

My answer to all above questions is categorically NO: the reviewer did not fulfill any of the above requirements to make a sound analysis and to ensure there are no significant doubts and questions about the reviewer's conclusions. Some, but not all, reasons why the reviewer did not meet the above criteria are summarized below. All reviewer comments are presented in italics.

Ad 1. Provided required proof for his/her statements and conclusions?

DID NOT – The reviewer talks about low hydrogen content in coal and bitumen but fails to provide any proof that this is not enough to generate distillate oils. Also the reviewer states that the ABL technology cannot work since other processes (using different feed stocks, etc.) had to use large quantities of hydrogen. The reviewer fails to show how other technologies relate to the ABL technology.

There are a number of questionable conclusions in the review, e.g.: *“The reviewer does not believe that DME will perform as anticipated because the proponent lacks the understanding on issues limiting SAGD performance,”* which is based on that *“no SAGD limitations were discussed.”*

Ad 2. Showed understanding what is claimed and what was performed?

ONLY SOME – The reviewer made a number of misunderstandings, misinterpretations and misstatements about what is claimed. That puts into question whether or not the reviewer actually understands what is claimed and what was performed. The reviewer claims that the proponent made the following statements: *“ABL will solve SAGD problems;”* *“in SAGD, it simply proposed to substitute DME for the current proposed solvent;”* and other. The proponent did not make these statements.

Ad 3. Did proper diligence in selecting and quoting references?

DID NOT – The reviewer is either not familiar with or did not want to discuss similar work and reported results on co-processing of coal and oil by other scientists and laboratories.

26/07

Ad4. Performed the review in an objective, professional manner?

DID NOT - The reviewer is making a conjecture as to what the proponent understands and does not understand based on the fact that the proponent does not discuss some issues, e.g. SAGD case. This is an illogical and questionable approach.

Ad 5. Does not leave any (significant) doubt as to the value of the review?

LEFT DOUBT - All major conclusions are based on the reviewer's statement that the proponent does not have technology. Since no proof has been provided by the reviewer for this statement, all major conclusions by the reviewer are not proven. The review is practically worthless in terms of establishing whether or not the proponent's claims are correct and the project warrants support.

In spite of repeated statements that the proponent does not have any technology, the reviewer does not provide any proof that coal-oil co-processing and/or that the proponent's work and/or data are incorrect. The reviewer simply states that the proposal is not technically and scientifically sound. The reviewer had an opportunity to support his/her statements with simple calculations (re: insufficient hydrogen in coal), specific references to experiments (showing that co-processing of coal and asphaltenes does not work), but the reviewer fails to do that.

After reading all the reviewer's comments we still don't know whether or not the proponent's technology will provide substantial (or partial) benefits for bitumen upgrading; however, we do know that the reviewer made all sorts of unsupported statements and failed to prove that, as the reviewer states, "*there is no technology.*" This is a poorly documented review, full of misleading and unsupported statements based on no technical or scientific data, facts, information or references that are relevant to the proponent's technology. The reviewer makes inferences based on technologies which may or may not have some relevance to the proponent's technology (the reviewer does not clarify why the referenced technologies are relevant), and which make the reviewer's statements, conclusions and discussion unsupported.

What counts in any review is what the reviewer says and if the reviewer's statements have been supported with clear and objective facts, data, information and references. The reviewer fails to provide any support for his/her statements and most statements are either misleading or unproven. For example, the reviewer points out that the proponent does not discuss shortcomings of different technologies and, therefore, does not have an understanding of the issues involved and hence, in absurdum logicum, the proponent's approach must also be wrong.

I have specific observations regarding the following reviewer's comments in terms of their truthfulness, soundness, and value.

1. "*The amount of hydrogen donated is far less than what is needed.*"

Unsubstantiated statement; no data, calculations or any other proof is given by the reviewer.

30/07

2. *"The ABL co-processing concept has similar technical misunderstandings as the Gulf Donor Solvent."*

Baseless, misleading and irrelevant inference and reference, for the reviewer must understand the difference in composition and structure between the hydrogenated hydrocarbons used in the Gulf process and the coal proposed for use in the ABL process.

3. *"There is no technology"*

Unsupported statement based on: 1) statement that there is not enough hydrogen in coal; and 2) baseless comparison to Gulf Donor Solvent technology.

4. *"There is no technical data to substantiate that more distillates can be produced in coal oil co-processing."*

Misleading and untruthful statement because technical data substantiating coal-oil co-processing were published by others than the proponent. The reviewer is either not familiar with the subject, or chose to ignore this information.

5. *"The only rationale that can lead to the distillate yield observed by the various cited patents and agglomeration tests is potential experimental error"*

Given that the reviewer did not assess the proponent's experiments, analytical techniques and data quality, this statement is highly speculative and groundless. All the reviewer can say is: *"One of the possible explanations is..."*, but then other alternative explanations should be also considered, one of which is that the proponent did perform the laboratory and pilot runs in a technically sound and scientifically correct manner.

6. *"In SAGD, it simply proposed to substitute DME for the current proposed solvent" ...*

No, the proponent does not intend to use the SAGD process and any current proposed solvent.

Further comments regarding the poor quality of the review:

Item 2. Understanding of Context & Scope – UNPROVEN

The reviewer makes a series of unsubstantiated comments like: *"...higher than expected distillates" ...; ... "because of excessive heating temperatures" ...; "analytical data may show..."*; *"... using DME to recover heavy oilis technically and economically unsound..."* – no supporting data or information is provided for these comments.

Item 3. State-of-the-Art Advancement - ILLOGICAL

The reviewer defines state-of-the-art as simply incremental advancement of the current technologies -- Better catalyst, more information about reaction mechanisms and kinetics -- doing the same but doing it better. He/she draws an illogical conclusion that because ABL does

3/1/09

not support any of these objectives therefore it does not provide any additional value. Significant breakthroughs frequently occur because of new, different ways of thinking and doing things.

Item 4. Fine-tuning or Breakthrough – UNSUBSTANTIATED

The reviewer repeats the same statements: “*no scientific and technical content, technically unsound, cannot produce liquid distillate*” – yet at no place does the reviewer give any proof for his statement. Just general unsubstantiated opinion is given.

Item 5. Uniqueness & Advantages – IRRELEVANT AND BIZARRE COMMENTS

“*did not describe any competing technologies,*”; “*superficially cites many established commercial processes,*”; “*failed to understand why SAGD failed to performed.*” The uniqueness and advantages of ABL claimed by the proponent are not addressed at any point. Why did the reviewer decide not to discuss these important characteristics of ABL?

Item 6. Competing R&D & Synergies – CONFLICTING STATEMENTS

On one hand, the reviewer says “*ABL proposal did not describe similar R&D ...elsewhere.*” But then notes that the proponent “*Provided a letter from UNICO International Corporation that claims confirmation of the Aglotherm process in their test.*” “*The letter claimed they converted 90% of the petroleum vacuum residue*”...*But, the proponent did not provide any technical data on the composition and boiling point distribution of the distillate oil.*” It is customary for the reviewer to ask for additional data if he/she feel this is essential for the review to be unbiased and sound. Without this information all that reviewer can say, whether or not distillate oils came from coal or asphaltenes, is: I don’t know unless I see data on the composition of the distillate oil. Yet, the reviewer continues throughout the review repeating an unsubstantiated statement: “*there is no technology,*” as if repeating it often enough could make it true and proven.

On one hand the reviewer is building his/her case on how important is to know the composition of the distillable oil, on other hand the reviewer decides not to ask for this information without clarifying why.

Item 7. SWOT Analysis – BASELESS AND UNSUPPORTED

“*None can be identified...*”; “*No technical merit...*”; “*No hope...*”. All these statements are baseless, unsupported and un-collaborated.

In items 8 to 14, the reviewer repeats that “*there is no technology in the proposal*” as if repeating it over and over could make it more convincing. The reviewer’s statements are unsupported and, therefore, do not provide any information as to the presence or absence of any merit in the ABL process.

The review is full of unsupported, misleading, often irrelevant statements and arguments. When a reviewer disagrees with proponent’s claims, as obviously this reviewer does, it is the reviewer’s obligation to support his/her statements with more than just his/her beliefs and anecdotal stories of what worked and did not work in some technology developments. The reviewer had an opportunity to present data, calculations, specific facts and references in support

of his/her statements and arguments. He/she failed to do it and ignored the summary data on ABL co-processing results presented in Dr. Maekawa's review.

I have reviewed many technologies, provided technology R&D roadmaps for large R&D government and industrial organizations, and evaluated numerous reviews written by others, but I have never seen such a blatant case where a reviewer makes misleading statements as to what the proponent claims; makes dismissive statements about the proponent's technology without any proof to support his/her statements; and accuses the proponent of a lack of understanding of related technologies because the proponent chose not to discuss them in some detail. The poor quality of this review is regrettable because after reading this review we are no closer to knowing the value of the proponent's technology and approach, than we were before this review was commissioned by the AERI.

I am sure the reviewer "*BELIEVES*" (as stated by the reviewer) that the ABL process does not have any merit. But what he/she believes is of no value to the evaluation of the ABL technology unless he/she can provide unambiguous proof and support for his/hers beliefs and opinions. A collection of unsupported statements is useless for evaluation of the ABL process. No technical and/or scientific proof is presented to substantiate the reviewer's claims regarding the alleged faults and shortcomings of the ABL process. Normally the whole review would be considered a laughing matter had it not be done under the auspices of the AERI.

Here are some helpful comments to assist the reviewer to write a better review in the future:

When producing helpful and supported comments it is important to:

1. Ensure that you understood things right
2. Help readers of the review make decisions
3. Give the proposal a fair treatment

Instead of saying: "*I don't think this solution will work*"

Say: "In the following example, the method produces the wrong result:"

Or: "Here is a counter example....."

Instead of saying: "*It was experienced by XYZ company that a different process, but I believe based on similar science, does not work.*"

Say: "*The approach has been shown not to work by A. Smith, Low product yield of feed hydrogenation, Oil Journal, vol. X, p. yy, 19ZZ. Both processes use similar mechanisms, feedstock, etc., which are.....*"

Final advice: If you think the proponents are unbelievably mistaken and uninformed, you have probably misunderstood something very fundamental.

33/04