



Managing Design Competition – A Process Engineering Approach

by Ir. Assoc. Prof. Dr Chong Chien Hwa

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A two hour talk on Front End Engineering Design (FEED) talk was organised by Chemical Engineering Technical Division (CETD) on 2 March 2018. The talk was delivered by Ir Dr. Chan Tuck Leong from PETRONAS Malaysia. For the past 16 years, he involved in various project and process engineering capacities. Currently, he is the Head of Digital Project Steering, PETRONAS. Topics covered in this talk were facets of a successful projects, LNG process design and stakeholders involvement in design competition.

In the introduction, Ir Dr. Chan explained what design competition in FEED is about. It consist two or more teams working on same project proposal for a given phase of a project during design stage. In addition, it creates and leverages on natural competitive tension between teams. Lastly, the winner will get the contract to build what they proposed.

Fig. 1(a) shows that the best design are defined by cost, quality, schedule, compliance and unfamiliarity and it needs to be on the right phase as shown in Fig. 1(b). He advised participants to define how the competition is organised, select comparable competitors and defines a clear competition criteria prior to the competition. He also shared some examples related to final assessment design submissions. He claimed that it is challenging to ensure what is proposed can be done. To overcome this challenge, he recommended doing it through setting up the right process guarantees and penalties imposed to the competitors.

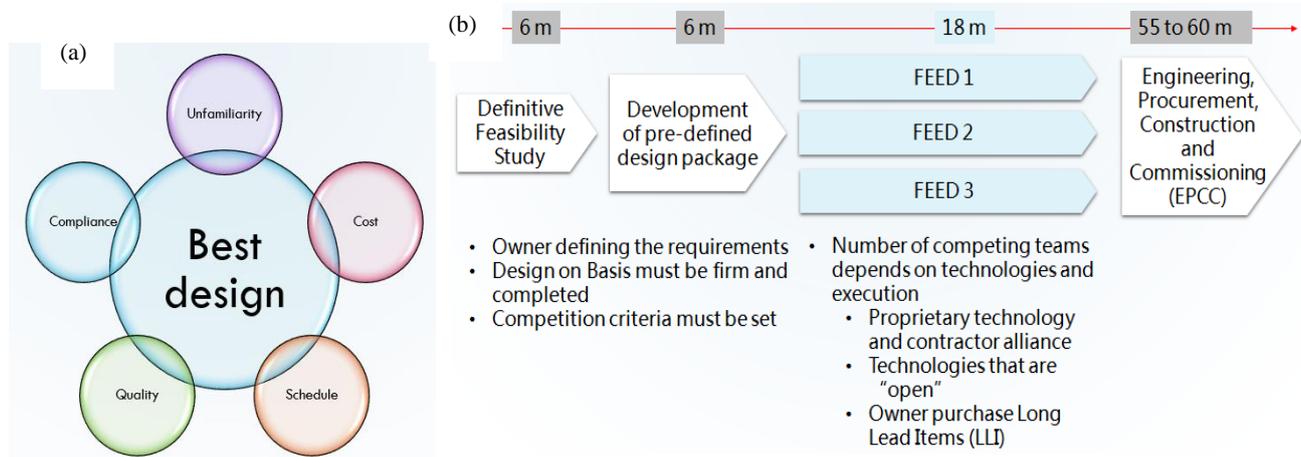


Fig. 1 Design competition and it needs to be on the right phase

Next, he talked about a primary outcome, other important criteria and constraints to be met in design. Example of primary outcome is maximum production on an annualised basis. Energy or emission intensity and used of proven equipment are important including the amount and quality of feed gas. He mentioned environmental conditions could be a constraint as well. He also shared key design philosophies including sparing, isolation, energy efficiency, use of novel technology or equipment and flaring and fugitive emission with the participants followed by Clear Design of Basis (BOD), design standard hierarchy and compliance to environmental conditions.

At the end of the talk, he recommended the participants to balance the creativity & compliance to BOD at review stage. The participants are attracted with information and experiences shared during the talk. The talk ended with two hour interactive question and answer session.



Ir. Assoc. Prof. Dr Chong with the speaker



Participants