



Irish Academy of Engineering.  
Comment on:  
Capacity Remuneration Mechanism Review (EY)

For the past several years there have been notable failures of the Capacity Remuneration Mechanism (CRM) to deliver sufficient generation to the Irish power system.

The Commission for Regulation of Utilities (CRU) commissioned Ernst and Young (EY) to examine the reasons for this failure and to suggest remedial actions.

In June 2022, the EY report was completed. It was subsequently published, and comments were invited on the analysis and recommendations

It should be noted that EirGrid, while initially cooperating with the report, subsequently recused itself while disagreeing with the recommendations.

The Academy is pleased to offer some views on the issues raised by, and recommendations included in, the report.

The report is structured around 12 questions. This comment takes each question in turn and comments on the answers provided and the recommendations suggested.

## Question 1.1: Is the SEM reliability standard adequate?

EY Answer      No

EY Advice:      Tighten the standard

This is a very simplistic view of the Loss of Load Expectation (LOLE) standard. The tighter the standard then the more generation will be required on the system to manage the risk of failure to meet peak demand and the higher the cost to the consumer.

Some countries do operate higher national standards –typically 4 hours LOLE instead of Ireland’s 8 hours.

However, the current problems were not due in any way to the standard. They were due to a failure to take timely effective action to maintain the standard.

The real test of a standard is its performance over time. The current Irish LOLE standard has proved entirely effective for more than a half century. Standards are often a product of long experience, and the current standard has been tested time and again and found to be effective in Ireland.

Tightening the LOLE standard will lead to increased investment in generation and increased costs for consumers. The Academy feels this is unnecessary.

Compliance with the current standard is what is required –and what is currently missing. EirGrid’s most recent Generation Capacity Statement (GCS) predicts an LOLE of 57 hours in 2022. Whether this is compared with a standard of 8 hours or 4 hours is entirely beside the point.

## Question 1.2: Did TSO Forecasts identify the growing capacity shortfall?

EY Answer      No

EY Advice:      Explain the process. Have an expert panel review the GCS report

EirGrid's GCS in 2017 identified significant upcoming capacity shortages in 2021. It pointed out the critical importance of interconnectors in achieving the LOLE standard.

In subsequent years the GCS indicated that these capacity shortages might not arise for several further years.

However, the 2019 GCS report drew attention to two important issues introducing much uncertainty into the analysis:

- Data Centre demand was becoming a major component of overall demand and there was considerable uncertainty as to how it might evolve.
- Plant reliability was steadily falling. This was entirely predictable as base load generating plant was being cycled continuously to back up variable renewable generation.

The process used for this analysis is absolutely standard and has been used by Power System Operators for decades. Analyses typically use Monte Carlo simulations; it is not obvious what further explanations are required.

It must be understood that these simulations are only as good as the assumptions used in the modelling and far more uncertainty surrounded these assumptions in 2019 for the reasons quoted above.

The CRU should of course review the modelling assumptions, an expert panel might indeed provide assistance, but it is important that this step does not delay any necessary actions.

### Question 1.3: Did the RAs make appropriate adjustments to TSOs recommendations?

EY Answer      No

EY Advice:      Introduce a monitoring process or standardise adjustments

The Academy does not understand the basis for Regulatory Agency (RA) adjustments to the TSO analysis. Why should such adjustments be required?

### Question 2.1: Did the auctions attract sufficient participation?

EY Answer      No

EY Advice:      Build more transmission

Ireland certainly needs more transmission capacity, and this would facilitate new generation investment.

However, this is an extremely simplistic answer. The transmission network is what it is at time of auction. It is for the CRU to provide sufficiently attractive auction terms if capacity is to be added.

The pertinent question (unanswered) is: Why were the terms on offer not sufficiently attractive?

Why, for example, did the CRU offer 10 year contracts while 15 year contracts were standard in the UK?

Is it likely that the CRU sought to transfer excessive risk to the contractor and thus discouraged participation?

Is it possible that for reasons of planning and permitting difficulties, potential providers of generation capacity have decided to cease doing business in Ireland?

Question 2.2: Are bidding restrictions on existing plants prompting plants to close sooner?

EY Answer	No
EY Advice:	None required

The Academy has no further comment.

Question 2.3: Have new build projects been appropriately prequalified for auctions?

EY Answer	No
EY Advice:	Require prospective capacity to be fully consented

The Academy wonders if this is feasible under current regulations.

Perhaps a more sensible approach might be to allow for delays and start earlier.

Question 3.1: Are T-4 timelines long enough to enable new build to deliver?

EY Answer	No
EY Advice:	Increase the lead time

The Academy completely agrees with this recommendation.

The 4 year lead time used so far ensures that only Open Cycle Gas Turbines (OCGT) will be offered. These are the cheapest option in capital expenditure terms and are least likely to encounter planning difficulties.

However, excluding Combined Cycle Plant (CCGT) will lead to increased fuel use and cost as well as increased GHG emissions.

### Question 3.2: Are the incentives for delivery too low to ensure new capacity procured is actually built?

EY Answer      Yes

EY Advice:      Increase performance securities

This is undoubtedly easy to do but is quite likely to discourage participation. The real issue is the risk faced by participants. For example, some have withdrawn at short notice because of revisions to emissions legislation and the inability of selected plant to comply.

More recently, construction inflation has become a much bigger issue for potential participants.

The CRU tendency to pass all such risk onto participants is likely misguided.

Expertise in the area and familiarity with plant OEMs is a pre-requisite for managing such risk.

It may be appropriate in some cases for the CRU to take the risk. It has been common practice in the past for the client to take inflation risk as contractors have little control over it.

### Question 3.3: Is there sufficient monitoring of new build projects' progress against milestones?

EY Answer      No

EY Advice:      Require performance security to be lodged prior to auction

This recommendation seems far too simplistic

If there is insufficient monitoring of project progress, then a proper project management office should be established.

There is now more than enough evidence in Ireland (Children's Hospital, Western Building Systems) to show that a focus on unloading inappropriate risk onto contractors leads to catastrophic project failure.

If such an office is to be established, it is probably better located in EirGrid than in the CRU.

It may be appropriate to remove most project responsibilities from the CRU and place them with EirGrid which has a track record of managing high technology projects. This would have to come with an appropriate increase in resources.

The Academy understands that the Single Electricity Market (SEM) involves 2 jurisdictions, 2 regulators and 2 TSOs. Making the changes recommended above will require political support in both jurisdictions.

### Question 3.4: Have the RAs made appropriate decisions on requests for extensions by new build projects?

EY Answer	No
EY Advice:	Allow extension requests when probability of delivery is high

The Academy agrees.

### 4.1: Are there adequate incentives for generation to be reliable?

EY Answer	No
EY Advice:	Adjust Market. Monitor performance. Introduce penalties

The rather generic advice appears to ignore the reasons for current poor availability.

Most of the existing plant stock is CCGT, designed for base load running. Intermittent operation to balance variable renewable generation is certain to degrade plant reliability and this is now fully evident.

No incentive design scheme is going to change this in the short and medium term.



#### Question 4.2: Are there adequate incentives for DSUs to be reliable?

EY Answer      No

EY Advice:      Lots...

The Academy has no further comment to make on this issue

#### 4.3: Does the CRM adequately value efficient generation technologies?

EY Answer      No

EY Advice:      15 Year contracts. Improve ancillary services contracts

The 15 year contract issue has already been raised.

Why did the CRU insist on 10 year contracts? Was this Government policy?

The 4 year delivery period effectively rules out efficient CCGT plant as the financial risk associated with short term permitting and construction is too high.