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Consultation on DS3 System Services Enduring Scalars

Dear DS3 Project,

Lumcloon Energy Limited (LEL), new entrant developer of a new 300MW flexible CCGT near Tullamore Co. Offaly and a new parallel proposal for utility-scale Energy Storage Systems with a view to providing DS3 services, welcomes the opportunity to respond to consultation on the form of the **DS3 System Services Enduring Scalars**.

Key Messages

Maintaining the same tariff rates and relying on the SNSP to increase over time as a means to increase the revenues along the original glide path adds a further revenue uncertainty for new investors in new system service resources. This is compounded by the design of the Temporal Scarcity scalar for FFR.

The Temporal Scarcity scalar with no revenue for FFR when SNSP < 60% introduces significant risks outside of the control of the system service plant which investors (debt and probably even equity) will be unwilling to take. This is particularly true in the first few years of operation as TSO operation practices are refined and evolve. There is no history of SNSP > 60% (for good reasons) and, while TSO engineers with internal system insights may expect the SNSP to exceed 60% for a reasonable number of trading periods, it is almost impossible to convince bankers that there is a sufficiently high probability of such an outcome that they would be willing to risk loaning money.

Lumcloon proposes three alternative solutions in order of preference.

- a. Lumcloon offers a FFR temporal scarcity scalar structure that moderates early-year new entrant risks and moves towards the TSO recommendation over time. We propose that when SNSP < 60%, the scalar value is 0.75 for year one, 0.5 for year two, 0.25 for year three and then zero from year four onwards. In each of these years the corresponding scalars for 60% < SNSP < 70% and SNSP > 70% would be adjusted downward to yield a revenue neutral result for the New Providers Base Case. See the table under the answer to Q3 for details. We believe

that the FFR capability estimates the TSO used for the existing resources is significantly overstated and encourage the TSO to review a few units' actual performance. This means that if the Lumcloon FFR temporal scalar proposal were adopted, the TSO goal of incentivising new entrants and not overly compensating existing units would be significantly satisfied.

- b. For FFR only, the Temporal Scarcity Scalar of 8.5 would apply to the 50 hours in each month with the highest SNSP and the scalar of 6.2 would apply to the 50 hours with the next highest SNSP. The number of hours chosen roughly equate to the % time with SNSP>70% and 60%<SNSP<70% in the New Providers base case.

This provides certainty to FFR providers that the revenue is fair and secure (subject to maintaining high levels of availability), protecting against:

- Low wind years
- Lack of potential success of the DS3 programme to reach 70% SNSP
- Low wind quarters (creating cash-flow issues for debt servicing more generally)

It provides greater certainty to the TSOs that their budget is not going to be significantly exceeded in an exceptionally windy year.

- c. There could be a floor on FFR revenues of, say, 80% of the New Providers Base Case scenario. This could be calculated on a quarterly basis.

In relation to an additional measure to incentivize a unit to supply to the TSOs an accurate forecast of its availability to provide Reserve and Ramping Margin Services, there is already a strong incentive to provide accurate availability forecasts through the Performance scalar. It is not clear what additional benefit a separate Forecasting Discount Factor would provide.

Here are the detailed answers to the individual TSO questions:

Question 1: *Do you agree with our proposal to include in the performance assessment methodology to determine the value of the Performance Scalar an additional measure to incentivise a unit to supply to the TSOs an accurate forecast of its availability to provide Reserve and Ramping Margin Services? If not, please specify why or identify what element of the proposal you believe requires amendment?*

There is already a strong incentive to provide accurate availability forecasts through the Performance scalar. It is not clear what additional benefit a separate Forecasting Discount Factor would provide. It appears that the trigger for a Forecasting penalty would be an "Event". Any lower availability than that declared would already be penalized under the Performance scalar.

Question 2: *Do you agree with our proposal to implement a Product Scalar for the Faster Response of FFR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

We agree with this proposal as a faster response adds additional value.

Question 3: *Do you agree with our proposal to implement a Product Scalar for the Enhanced Delivery of FFR, POR, SOR and TOR1? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

We agree with this proposal.

Question 4: *Do you agree with our proposal to implement a Product Scalar for the Continuous Provision of Reserve from FFR to TOR1? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

We agree with this proposal. In the paper, it was not clear whether the scalar of 1.5 applied only to FFR or included POR, SOR, TOR1. There is an argument that it should apply to all four products.

Question 5: *Do you agree with our proposal to implement a Product Scalar for Enhanced Delivery of SSRP with an AVR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

We agree with this proposal.

Question 6: *Do you agree with our proposal to implement a Product Scalar for SSRP with Watt-less VARs? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

We agree with this proposal as it reflects the additional value to the TSO of such a service.

Question 7: *Do you agree with our proposal to implement a Temporal Scarcity Scalar for DRR and FPFAPR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Please see answers to Q8 and Q9.

Question 8: *Do you agree with our proposal to implement a Temporal Scarcity Scalar for FFR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

There is no history of SNSP > 60%, and for good reasons. While TSO engineers with detailed and confidential system information and forecasts might predict that SNSP will exceed 60% for a reasonable number of trading periods, there is no existing historical data or equally sophisticated independent analysis to convince traditionally conservative bankers of this. There must be a high probability of such an outcome for debt to be willing to risk lending money.

Lumcloon proposes three alternative solutions in order of preference.

- a. Lumcloon offers a FFR temporal scarcity scalar structure that moderates early-year new entrant risks and moves towards the TSO recommendation over time. We propose that when $\text{SNSP} < 60\%$, the scalar value is 0.75 for year one, 0.5 for year two, 0.25 for year three and then zero from year four onwards. In each of these years the corresponding scalars for $60\% < \text{SNSP} < 70\%$ and $\text{SNSP} > 70\%$ would be adjusted downward to yield a revenue neutral result for the New Providers Base Case. See table below.

70% SNSP step	60% SNSP step	<60% SNSP step	Relative to Consultation Paper
3.61	2.63	0.75	42%
5.27	3.84	0.50	62%
6.87	5.01	0.25	81%
8.50	6.20	0.00	100%

We believe that the FFR capability estimates which the TSO used for the existing resources is significantly overstated and encourage the TSO to review a few units' actual performance. This means that if the Lumcloon FFR temporal scalar proposal were adopted, the TSO goal of incentivising new entrants and not overly compensating existing units would be significantly satisfied.

- b. For FFR only, the Temporal Scarcity Scalar of 8.5 would apply to the 50 hours in each month with the highest SNSP and the scalar of 6.2 would apply to the 50 hours with the next highest SNSP. The number of hours chosen roughly equate to the % time with $\text{SNSP} > 70\%$ and $60\% < \text{SNSP} < 70\%$ in the New Providers base case.

This provides certainty to FFR providers that the revenue is fair and secure (subject to maintaining high levels of availability), protecting against:

- Low wind years
- Lack of potential success of the DS3 programme to reach 70% SNSP
- Low wind quarters (creating cash-flow issues for debt servicing more generally)

It provides greater certainty to the TSOs that their budget is not going to be significantly exceeded in an exceptionally windy year.

- c. There could be a floor on FFR revenues of, say, 80% of the New Providers Base Case scenario. This could be settled on a quarterly basis.

We believe that the FFR capability estimates the TSO used for the existing resources is significantly overstated and encourage the TSO to review a few units' actual performance. This means that if the Lumcloon FFR temporal scalar proposal were adopted, the TSO goal of incenting new entrants and not overly compensating existing units would be significantly satisfied.

Question 9: *Do you agree with our proposal to implement a Temporal Scarcity Scalar for 11 Existing System Services? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

The proposal for these services is acceptable as there is still some payment when SNSP < 60%. However it still introduces a revenue risk as the revenue depends on the SNSP and it is difficult to predict without access to all of the confidential information and models available to the TSO, what the SNSP will be.

Question 10: *Do you agree with our proposal to implement a Locational Scarcity Scalar for All System Services? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

It is reasonable to build in the capability to introduce a Locational Scarcity Scalar at a later stage as long as the minimum value is 1 (as proposed)

Question 11: *Do you agree with our proposal NOT to implement a Product Scalar for Enhanced Delivery of DRR with more reactive current? If not, can you provide rationale to support your views?*

Yes we agree.

Question 12: *Do you agree with our proposal NOT to implement a Product Scalar for Enhanced Delivery of SSRP with a PSS? If not, can you provide rationale to support your views?*

Yes we agree.

Question 13: *Do you agree with our proposal NOT to implement a Product Scalar for SIR with Reserve? If not, can you provide rationale to support your views?*

Yes we agree.

Question 14: *Do you agree with our proposal NOT to implement a Product Scalar for Faster Response of FPFAPR? If not, can you provide rationale to support your views?*

Yes we agree.

Question 15: *Do you agree with our proposal NOT to implement a specific Temporal Scarcity Scalar for Reserve Products? If not, can you provide rationale to support your views?*

Yes we agree.

Question 16: *Do you agree with our proposal NOT to implement a specific Temporal Scarcity Scalar for SIR? If not, can you provide rationale to support your views?*

Yes we agree.

Question 17: *Do you agree with our proposal NOT to implement a specific Volume Scalar for Regulated Arrangements? If not, can you provide rationale to support your views?*

Yes we agree.

Question 18: *Do you agree with our proposal to implement Frequency Response Curves to define the provision of the FFR Service? If not, please specify why or identify what element of the curve design you believe requires amendment?*

Frequency Response Curves are necessary to define the provision of FFR. At the workshop on 1st Aug, it emerged that providers will be incentivized to contract values of F1 to F4 and Y which will be of greater value to the TSOs. It is essential that such incentives are defined and finalized as soon as possible because they have significant impact on the design and specification of a new DS3 plant. For example the values of F1, F2 and Y have a significant bearing on the continuous charging and discharging duty cycle of energy storage plant.

If you have any queries in relation to our response, please contact us by return.

Yours faithfully,



Nigel Reams
Director
Lumcloon Energy Ltd.