

Intercast & Forge Pty Ltd

Report Date : 19th March 2020

Activity Title	Advancing Renewables Program – Demand Response
Contract Number	G00921
Recipient	Intercast & Forge Pty Ltd ABN 28 090 515 334
Reference	Knowledge Sharing Report - 3
Time Period	Program Period 4 – 1st April 2019 to 31st May 2019
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Contact Details	Mark Mignone Financial Controller Mark.mignone@intercast.com.au

This Activity received funding from ARENA as part of ARENA's Advancing Renewables Programme - Demand Response.

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Summary

This report provides an overview of the demand response for Intericast & Forge Pty Ltd for the Demand Response Trial and Knowledge Sharing for Program Period #4 (1st April 2019 to 31st May 2019).

This report describes the technology used by Intericast & Forge to curtail electricity usage at our foundry site in Wingfield SA.

It also outlines the knowledge and experiences gained by Intericast & Forge during the reporting period.



Overview of Demand Response being Provided

Intericast & Forge are a foundry based in Wingfield SA and we use a direct curtailment of energy use at our site.

Intericast & Forge have developed an internal procedure in the event of load curtailment which enables us to quickly reduce our consumption.

We have installed an Electricity Monitoring system in our foundry which assists in our capability of load curtailment.

This system allows us to control shutdown of key high usage equipment centrally and promptly following AEMO request to demand curtail.

This is achieved by turning our furnaces off and other key equipment using the switches as shown in the picture below.



Technology used for demand response activation

Intercast & Forge uses an extensive email list to ensure any notification from AEMO is identified as soon as possible and acted upon.

A written Standard Operating Procedure is then followed to ensure the business can comply with the AEMO request and fulfil its obligations in accepting the request in a timely manner.

Business model and pricing structure

Since we are a single site user of power there is no requirement for a business model and pricing structures/incentives to be employed to recruit capacity outside of our business.

Customer types and geographic location

Similarly as noted above Intericast & Forge is a user of power not an on-seller or retailer which is unlike other participants in the program. Therefore, its reliance on demand curtailment rests on its own ability to curtail power quickly and efficiently.

Analysis of performance based on six-monthly test data and any real activation data

Intericast & Forge were called upon by AEMO to tender for a live event on 30th May 2019.

This test was conducted successfully using our standard operating procedures for energy curtailment.

Intericast's contracted MW capacity was 5MWh for the period of the test, as opposed to the standard 10MWh contracted capacity. This was due to the base rate usage calculation within the testing hours range being below the required 10MWh requirement for certain periods. This thereby lowers the ability to demand curtail 10MWh should the low usage period be selected.

The results of the test were encouraging from the aspect that we were able to reduce electricity consumption significantly as the period selected was during a high usage time.

We were able to deliver an average of 12.078 MWh during the test period

DateTime	Furnace power	All other equipment	Total
30/05/2019 12:00	5,301.81	1,281.00	6582.811
30/05/2019 12:30	5,196.33	1,245.00	6441.334
30/05/2019 13:00	4,799.21	1,267.00	6066.209
30/05/2019 13:30	5,462.07	1,271.00	6733.071
30/05/2019 14:00	1,718.06	1,219.00	2937.062
30/05/2019 14:30	128.73	755.00	883.729
30/05/2019 15:00	98.30	339.00	437.301
30/05/2019 15:30	85.88	350.00	435.882
30/05/2019 16:00	73.71	334.00	407.706
30/05/2019 16:30	34.97	331.00	365.97
30/05/2019 17:00	1,018.00	338.00	1355.999
30/05/2019 17:30	135.15	349.00	484.153

The end result meant that we reduced from an average base of 13.2MWh down to 1.1MWh. We therefore more than satisfied the full requirement committed of 5MWh.

Summary of most recent lessons learnt from the development and operation of the project

Our physical process is now embedded into our work practices in that we can react almost instantly once given management approval to curtail. The external system of notification and our internal IT systems (eg firewalls etc) needs to be periodically tested due to possible unforeseen impacts on updates/upgrades etc to email correspondence. Hence I believe phone contact is a reliable complement to the electronic system of notification.