



**DNV GL – Multi-Model and Machine Learning
Wind Forecast Project
LESSONS LEARNT REPORT #1**

Funding Agreement Details

Recipient Name	DNV GL Australia Pty Ltd
Project Commencement Date	1 April 2019
Reporting Period	1 October 2019

Executive summary

DNV GL have entered a funding agreement (the Project) with Australian Renewable Energy Agency (ARENA) to provide short term wind power forecasts for the Ararat Wind Farm. The purpose of the Project is to explore the potential for wind farms to provide their own, more accurate, forecasts as inputs into AEMO's central dispatch system.

DNV GL has partnered with the Ararat Wind Farm Pty Ltd (AWF) and RES Australia Pty Ltd (RES). AWF represent the wind farm for which forecasts are to be provided, are providing the project with access to relevant data from the site to inform the forecasting process, and are allowing forecasts to be submitted on behalf of the Project. RES are providing support with facilitation of the Project, and evaluation of the value that accurate forecasts can provide to an operational project.

Two of the main challenges associated with the Project to date have been successful recovery of real-time data from the site, and communication via the AEMO MP5F API. The key lessons learnt are that it would have been beneficial to allocate additional resources to both aspects of the Project, across all stakeholders involved in the Project.

LESSONS LEARNT

Key Lesson/s

Two of the challenges faced by the Project to date have included:

- establishing a process to recover real-time data from the site and
- communicating with the AEMO API.

These challenges are discussed further below:

Recovery of real-time site data

The process of recovering real-time data from the site has been challenging. Currently DNV GL has been able to recover real-time site data through the third-party dispatch solution provider, and also directly from AEMO dispatch data. It has not been possible to obtain access to real-time site data through other mechanisms at this stage. Opportunities exist to increase the fidelity and reliability of the data currently available during execution of later stages of the project.

Connection with AEMO MP5F API

The process of connecting with the AEMO MP5F API has been challenging, and is still ongoing. This process could potentially be improved through clearer documentation of the steps necessary to connect to the AEMO API, specifically intended for third-party forecast providers, and resources to assist with troubleshooting when problems occur. Further, the process of connecting to the API has been complicated by having multiple forecast providers attempting to gain access to the API and submit forecasts for this wind farm at the same time.

The primary lessons learnt to date are that it would have been beneficial to allocate additional resources to each of these activities in the first phase of the project, across all of the stakeholders involved.

Implications for Future Projects

It is assumed that once the challenges associated with establishing communication with the AEMO API are overcome, they will be simpler to resolve for future projects.

However, the challenge of recovering real-time data from the site is likely to be unique to each future project. As such, it will be important to allocate adequate resources to this activity for future projects.

Knowledge Gaps Identified

The knowledge gaps identified primarily relate to the two challenges identified in the **Key Lesson/s** section.