Chapter 19. The Jupiter wind farm is not needed.

Where EPYC tries in vain to make the case that the Jupiter wind farm is relevant.

The revised Jupiter SEARs require that the developer:

> "should include:
> a strategic assessment of the need, scale, scope and location for the project in relation to predicted electricity demand, predicted transmission constraints and the strategic direction of the region and the State in relation to electricity supply, demand and electricity generation technologies, and its role within the Commonwealth's Renewable Energy Target Scheme."

In partial response, Epyc and its consultants wrote:

> "This Chapter outlines the key benefits and justification for the Project in the context of reducing Australia's greenhouse gas emissions, meeting future energy demands, supporting State and Commonwealth renewable energy targets, and contribution to economic development in the region."[1]

In the chapter that followed, EPYC did not make the case that the Jupiter wind farm will result in a NET reduction of Australia's GHG emissions.
As no grid based electricity is required for the next 20 years, Jupiter's contribution to meeting our future energy demands can only be as a result of closing reliable, cheap, base load capacity, to our peril. NSW does not have a renewable energy target[2] and Epyc does not consider the possibility that its economic contribution to the region and broader could be negative. (See Chapter 17 – Economic Impacts)

NSW does not need the Jupiter wind farm for electricity generation for 2 main reasons:
- The pipeline of NSW renewable energy projects exceeds that needed for NSW to meet its share of the Commonwealth Renewable Energy Target.
- Our installed electricity generation capacity is ample to meet our needs for twenty years.

Furthermore, the rest of Australia does not need our help either. To meet the national Renewable Energy Target, we need to construct Australia-wide 5000 MWs of renewable projects by 2020. There are 15,000 MWs in the pipeline.[3]
With the Labor governed states powering ahead. NSW could do nothing and the Commonwealth target would be overachieved.

Renewable energy pipeline.

NSW has far more renewable energy projects in the pipeline than it needs, especially wind farms. EPYC unfortunately did not do its homework and as a result became the last wind farm (apart from the recently resurrected Granite Hills wind farm) accepted into the NSW planning process three years ago. Unlike more experienced proponents, it soldiers on in a vain attempt to become relevant.

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[1] EIS Main Report. Page 2.1
[2] I sometimes wonder whether NSW has a hidden strategy. Allow their Labor governed neighbours to hastily progess their renewables targets and make a killing selling carbon based electricity when the inevitable happens.
[3] Wind Farm Commissioner Andrew Dyer to Jupiter residents, May 3, 2016.

Biala, Uungula, Capital 2, Crookwell 2 and 3, Paling Yards, Rye Park, Liverpool Range and other NSW wind farms are in various stages within the planning or pre-construction processes.

At present, NSW does not have a renewable energy target, and then Energy Minister, and now Planning Minister Anthony Roberts does not think it is necessary.

> "We don't need a renewable energy target, we are committed with almost $13 billion worth of renewable projects and we are attracting more,"[4]

He is correct as the figures below show.

The national Renewable Energy Target is 33,000 GWh by 2020

The NSW share of the national GDP is approximately 31.3%[5] therefore it is reasonable to assign to NSW a nominal target of 10,329 GWh.

Further, Minister Roberts said[6]:

> "More than 2,900 megawatts (MW) of renewable energy projects, worth an estimated $5.9 billion, currently have development approval in NSW," and:
>
> "On top of that, a further 5,400 MW of projects worth billions more have been in the planning pipeline, awaiting certainty around the future of the RET." and:
>
> "as a result, renewable energy now provides nearly 13 per cent of the state's total electricity generation capacity".

NSW has an installed capacity of approximately 19000 MW.[7] (NSW did at some stage have a target of 20% renewables by 2020 which equates to 3800 MW)

Doing the maths:

To produce 10,329 GWh requires a nominal capacity of 1179 MW. If wind farms were to produce this power and if we were to assume the efficiency factor ERM used for Jupiter of 35.7% then an installed nameplate capacity of 3302 MW is required. Compare this to the total renewables approved and in the development pipeline (the majority of which are wind farms) of 8,300 MW then it is apparent that not only is Jupiter not required, many of the wind farm projects in the pipeline before Jupiter are also not required.

However, a proportion of that target has already been installed. For instance, NSW has an installed wind turbine nameplate capacity of 660 MW[8]

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[4] http://www.abc.net.au/news/2015-08-30/nsw-lagging-behind-in-renewable-energy/6733366
[5] http://www.industry.nsw.gov.au/invest-in-nsw/about-nsw/economic-growth/Size-of-NSW-economy
[6] http://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0010/565921/NSW-a-big-winner-from-RET-certainty.pdf
[7] http://www.resourcesandenergy.nsw.gov.au/investors/investment-opportunities/electricity-generation
[8] http://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0008/586601/reap-annual-report.pdf

The figures used above do not include a number of NSW large scale solar farm projects recently submitted/approved, so the analysis and conclusions are conservative. Solar projects seem to enter the NSW planning process monthly and enjoy a quick passage through the system, for many logical reasons. (See Chapter 11, The solar option)

Nonetheless, NSW doesn't need the energy.

An issue raised in a submission to the Biala EIS was paraphrased by ERM as follows:

The following project objective is stated in the EIS: "contribute to the additional generating capacity required to meet the growing energy demand in NSW". This statement is incorrect. NSW has ample generating capacity to meet its needs for many years.

In response, ERM admitted to the error but brought up additional data from an updated ESOO report. ERM's key argument was that since the EIS, the industry had notified its intent to withdraw a significant proportion of the reported surplus by 2022. ie shut down unprofitable base load plant. Taken at face value this is persuasive. What ERM did not tell you was that there is ample replacement, approved, base load capacity. Two projects alone, Bayswater B and Dalton provide capacity far in excess of that lost in the planned closures.

Not a false answer by ERM, but certainly misleading.

Additionally, the National Electricity Market as a whole, and NSW in particular, does not require any more grid based electrical capacity for the foreseeable future (20 years)[9]
The 2016 National Electricity Forecasting Report [10] predicts no increase in NSW maximum demand for grid supplied electricity over its 20 year forecast period. The 2016-17 forecast is 14.2 MW and by 2035-36 it is 14.1 MW. Wind farms can only supply to the grid. Whilst battery storage may well have a use with rooftop solar PV, battery storage and wind based renewables is a fairy tale.

Reducing Australia's greenhouse gas emissions.

To mitigate Global climate change will require Global action.
Australia's contribution to the reduction of greenhouse gases is absolutely meaningless given the actions of China, India, Indonesia and others and the commitments they made to the Paris Accord.[11]
And now the US is poised to laugh in our face.
The Carbon Dioxide emissions from each of these countries will continue on their relentless upward journey. NSW should not even consider "leading the way" as these countries have clearly stated they have no intention of following. Leave the leadership to SA, VIC and QLD.
There is no evidence that GHG concentrations are diminished as a result of renewable energy uptake. CSIRO states the effect of Australia's GHG reductions won't be felt for centuries.

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[9] AEMO. 2016 National Electricity Forecasting Report
[10] https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/-/media/080A47DA86C04BE0AF93812A548F722E.ashx Page 24
[11] http://climateactiontracker.org/countries/china.html
China's commitment is to **peak CO_2 emissions by 2030 at the latest.**
India's commitment is to **lower the emissions intensity of GDP by 33% to 35% by 2030 below 2005**
Indonesia's commitment is to **reduce its emissions** by 29% below business-as-usual (BAU)

Conclusion

The Jupiter wind farm is not required. If ever approved, it will languish at the end of a long queue, annoying the hell out of the local community and then onto the Department who recommended it.

The NSW Government needs to make sure that it does not fall into the trap that has snared other renewable energy pioneers who now are finding that they have to pay traditional generators to keep operating.
More importantly the NSW Government would appear to understand the impacts of installing more renewable energy than required. All additional costs of installing renewables, in particular the cost of RECs, are borne by the consumer. Whilst climate change, like marriage equality, safe schools and refugees are important to many, State Governments are made and unmade by simpler issues such as the affordability of heating.