

Parramatta Metro –

Over Station Development



Submission prepared by Matt Mushalik (MEng) 13 Dec 20222

Re: <https://pp.planningportal.nsw.gov.au/major-projects/projects/parramatta-metro-over-station-development>

This plan will fail because it did not make any calculations on the energy requirements for construction and operation. The cart is being put before the horse

I refer to my submission on the Olympic Park Precinct on the function of metros and the energy illiteracy which is behind it

This document:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=PDA-35382336%2120220120T054804.992%20GMT>

shows the same ignorance. It is a monopoly game with building blocks.

In particular, the peak load has not been calculated as was done by the very Parramatta Council in this chart:

parramatta.nsw.gov.au/_data/assets/pdf_file/0004/179878/Appendix_13_Sustainability_and_Infrastructure_Study.pdf

IMPLICATIONS OF PARRAMATTA CBD GROWTH

PEAK DAY ELECTRICITY DEMAND (MW)

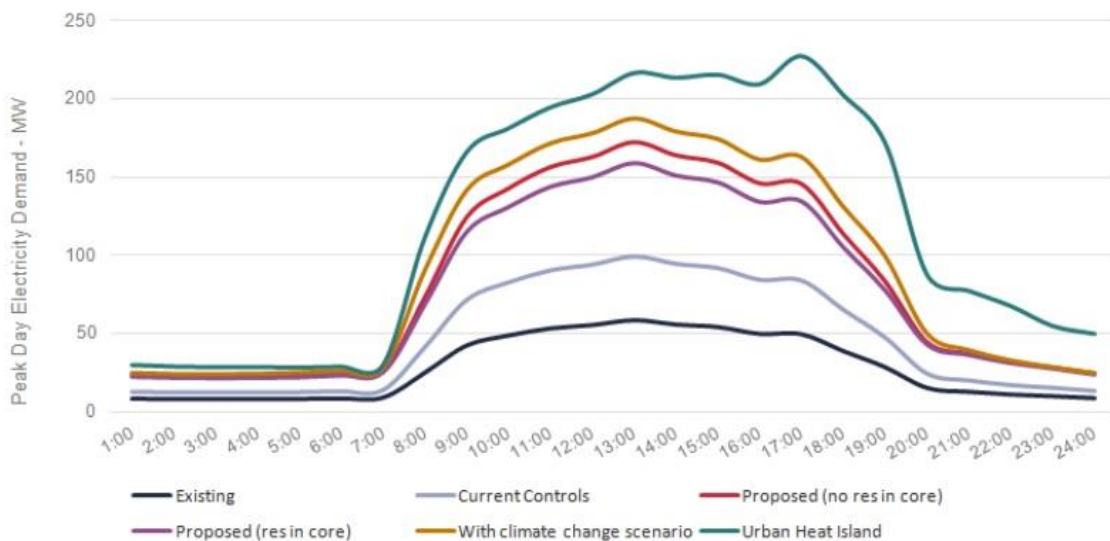


Figure 20: Expected peak day electricity demand profile under each planning scenario as well as under various climate change scenarios.

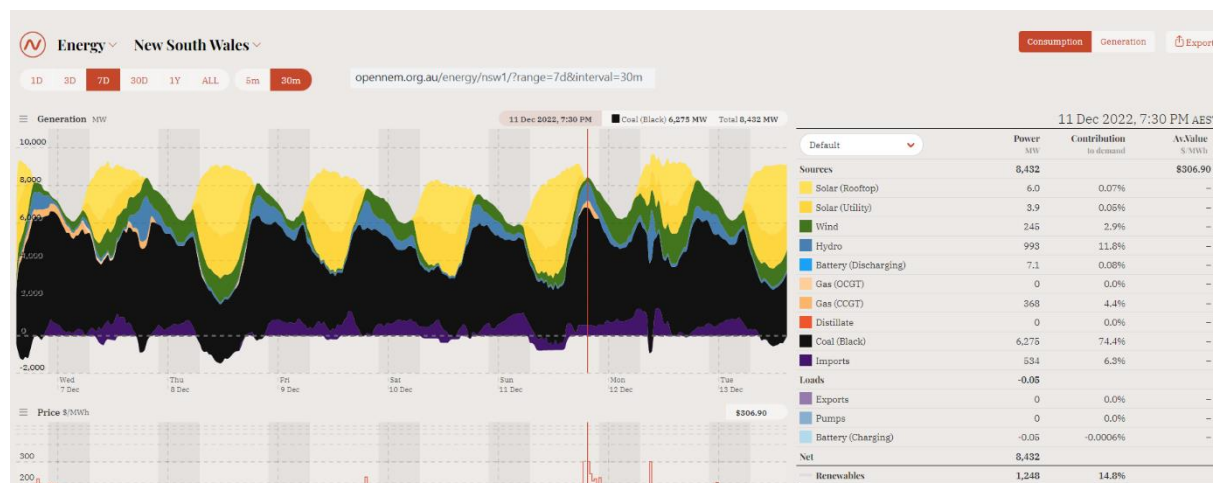
I have mentioned this in dozens of emails and also other submissions (Including the Greater Sydney Commission in Rydalmere hearings) but it was always ignored.

NEM Generation Information August 2022

Scheduled Capacities				AI	AK	AL	AN	AO	AS	AT	AU	AX
Region	Asset Type	Site Name	DUID	Owner	Fuel Type	Number of Units	Aggregated Upper Nameplate Capacity (MW)	Storage Capacity (MWh)	Expected Closure Year	Closure Date	Status/Bucket/Summary	Survey/Version Date/Time
NSW1	Existing Plant	Bayswater	BW01	AGL Macquarie Pty Limited	Black Coal	1	660		2033		Existing less Announced Withdrawal	4/07/2022
NSW1	Existing Plant	Bayswater	BW02	AGL Macquarie Pty Limited	Black Coal	1	660		2033		Existing less Announced Withdrawal	4/07/2022
NSW1	Existing Plant	Bayswater	BW03	AGL Macquarie Pty Limited	Black Coal	1	660		2033		Existing less Announced Withdrawal	4/07/2022
NSW1	Existing Plant	Bayswater	BW04	AGL Macquarie Pty Limited	Black Coal	1	685		2033		Existing less Announced Withdrawal	4/07/2022
NSW1	Existing Plant	Eraring	ER01	Origin Energy Eraring Pty Ltd	Black Coal	1	720		2025	19-Aug-25	Announced Withdrawal	14/04/2022
NSW1	Existing Plant	Eraring	ER02	Origin Energy Eraring Pty Ltd	Black Coal	1	720		2025	19-Aug-25	Announced Withdrawal	14/04/2022
NSW1	Existing Plant	Eraring	ER03	Origin Energy Eraring Pty Ltd	Black Coal	1	720		2025	19-Aug-25	Announced Withdrawal	14/04/2022
NSW1	Existing Plant	Eraring	ER04	Origin Energy Eraring Pty Ltd	Black Coal	1	720		2025	19-Aug-25	Announced Withdrawal	14/04/2022
NSW1	Existing Plant	Liddell	LD01	AGL Macquarie Pty Limited	Black Coal	1	500		2023	1-Apr-23	Announced Withdrawal	19/04/2022
NSW1	Existing Plant	Liddell	LD02	AGL Macquarie Pty Limited	Black Coal	1	500		2023	1-Apr-23	Announced Withdrawal	19/04/2022
NSW1	Existing Plant	Liddell	LD04	AGL Macquarie Pty Limited	Black Coal	1	500		2023	1-Apr-23	Announced Withdrawal	19/04/2022
NSW1	Existing Plant	Mt Piper	MP1	EnergyAustralia NSW Pty Ltd	Black Coal	1	730		2040		Existing less Announced Withdrawal	4/07/2022
NSW1	Existing Plant	Mt Piper	MP2	EnergyAustralia NSW Pty Ltd	Black Coal	1	660		2040		Existing less Announced Withdrawal	4/07/2022
NSW1	Existing Plant	Vales Point B	VP5	Delta Electricity	Black Coal	1	660		2029		Existing less Announced Withdrawal	20/04/2022
NSW1	Existing Plant	Vales Point B	VP6	Delta Electricity	Black Coal	1	660		2029		Existing less Announced Withdrawal	20/04/2022

358 *Please note Summer Typical capacities are not

Consider this chart from AEMO about the closing schedule of coal fired power plants and then look at this NEM chart. Just 2 days ago, 6,275 MW of black coal were needed at 7.30 pm to keep the lights on.



<https://opennem.org.au/energy/nsw1/?range=7d&interval=30m>

How do you think this will be replaced by renewables PLUS large scale pumped hydro storage?

Don't rely on the NSW electricity strategy.

<https://www.energy.nsw.gov.au/nsw-plans-and-progress/government-strategies-and-frameworks/nsw-electricity-strategy>

Here is the latest news on Snowy2

Snowy Hydro, other energy projects face cost blow outs after Clough collapse

6 Dec 2022

Some of the biggest energy and infrastructure projects in the country, including the Snowy Hydro 2.0 scheme, are facing renewed risks of cost blowouts and delays after the Perth-based construction company building them collapsed into administration.

Clough appointed administrators from Deloitte on Monday night after its rescue deal fell over after its white knight buyer and Snowy Hydro 2.0 partner, Italy's Webuild, walked away from buying the company.

<https://www.smh.com.au/business/companies/snowy-hydro-2-0-builder-collapses-after-white-knight-walks-20221206-p5c40t.html>

Some of the cost blow outs may come from other big infrastructure projects like road and metro tunnelling competing for materials and staff.

This shows the government is unable to apply principles of system dynamics.

Seasons of low wind and solar output will influence the shape of the NEM

You see, we have modelled a few renewable droughts in the NEM, and yes, you need a lot of storage to get through this (and it's good to see some other folks are now catching up with our earlier work on large storage on the NEM – YES, you need a LOT of Snowy's...)

One of the high renewable scenarios we modelled had 140GW of wind and solar, 10 x Snowy 2.0's, perfect interconnection and still required 20 GW of thermal backup plant used throughout June and July to survive the winter without loss. Poor interconnection or lack of co-ordination between the States will greatly increase the need for storage and thermal backup.

<https://wattclarity.com.au/articles/2022/06/seasons-of-low-wind-and-solar-output-will-influence-the-shape-of-the-nem/>

And let me add: low wind and solar output will shape the destiny of skyscraper cities

Have you calculated the storage requirements for 480 apartment towers along the Metro West?

Where are your estimates?

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13 Dec 2022