

To: Australian Energy Market Operator  
13 August 2024

## Re: Inputs, Assumptions and Scenarios Report Scenarios – Consultation Paper

Dear AEMO ISP team,

[ZEN Energy \(ZEN\)](#) appreciates the opportunity to respond to the consultation paper regarding the scenarios underpinning the Inputs, Assumptions and [Scenarios Report](#) (IASR). ZEN acknowledges the important role the Integrated System Plan (ISP) and related inputs play in guiding industry and government investment along the optimal development path to achieve a net zero grid with affordable, reliable electricity for consumers.

### About ZEN Energy

ZEN is an integrated renewable energy retailer serving government, commercial and industrial customers from a diverse portfolio of wind, solar and energy storage assets. Our clear goal is to focus on customers who contract 100 per cent renewable energy or are willing to embark on a journey to 100 per cent renewable energy by 2030.

ZEN is constructing and developing a portfolio of renewable and storage assets including both battery and pumped hydro storage developments, the largest of these being our Western Sydney Pumped Hydro project - comprising the evolution of a former coal washery at Nattai in South West Sydney and adjacent to Lake Burragorang into a [1 GW pumped hydro energy storage project](#) that could power 500,000 homes and businesses for substantially longer than 8 continuous hours.

Our brief feedback is included below.

#### 1) Data centre growth is decoupled from economic growth

ZEN are concerned that the methodology for *Emerging commercial loads* (line 5 of table 3 of the consultation paper) to forecast demand growth mainly based on economic growth scenarios could significantly underestimate the rapid deployment of data centres across the NEM, particularly in the progressive and step changes scenarios which based on 2024 ISP weightings are considered most representative of our trajectory. Data centre deployment is being driven by technological advancements and market demand for digital services rather than being a mature established industry growing in line with broader economic conditions. A clear short-term view of data centre demand growth is quantifiable from a review of publicly available information.

ZEN see the adoption of accurate, geographically specific data centre forecast growth as critical to the successful network planning of the NEM. The potential volume of new electricity demand

from data centres is so significant that not giving this load growth detailed consideration would be akin to ignoring rooftop solar within the modelling.

In the NSW Government's Major Project Portal, there are now more than 2 GW of pre-construction data centre projects in Western Sydney alone, approximately 20% of the region's peak demand.

The 2021 CSIRO report<sup>1</sup> into data centres estimated that they would cause an overall increase of 29% of future electricity demand in Ireland, before the deployment of publicly available AI models that has occurred over the last 12 months. Endeavour Energy expect that Data Centres alone will reach a peak demand of 5.9 GW, over 250% of their total current network demand.

ZEN have not assessed Data Centre applications that are in the planning system of other states within the NEM, however based on the findings from our review of the NSW planning system it is expected that the each capital city will be hosting gigawatts of Data Centre load growth.

Unlike other potential load growths such as hydrogen exports which are identifying countries to develop in based on low green electricity prices, data centres are locating close to customers to reduce latency and data centre owners have a willingness to pay a premium for secure electricity supply.

ZEN considers that a substantial portion of the development activity is already "committed" development which should be factored into every scenario, prior to overlaying more aggressive assumptions as a function of scenario. , Failure to factor this demand growth into the network planning will result in either a gap in the ability of the grid to service customers, the undesired life extension of thermal plant to maintain supply and reliability or a pause on new industrial load connections to the grid. From 2019 to 2022 Singapore put a moratorium on new data centre deployment in the country to provide time to develop a focus on those that are "best in class" in terms of resource efficiency and contribute to Singapore's economic and strategic objectives.

This increase in demand is underrepresented in the recent Integrated System Plan and is a threat to government objectives for system reliability and the transition.

#### **Recommendations:**

- Expressly forecasting load growth from Data Centres into each Potential Scenario (Progressive Change, Step Change and Green Energy Exports), not just applying a method somewhat proportional to economic growth. Short-term load growth should be informed by direct engagement with data centre proponents.
- Given the scale of data centre power demand, ZEN suggests an additional stand-alone data centre parameter to reflect that the boom is not driven by domestic economic conditions but by technological change. As such, ZEN believes it is inappropriate to bundle its forecasted growth with other emerging sectors such as manufacturing.

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<sup>1</sup> Data Centres and the Australian Energy Sector, CSIRO 31 May 2021

Concluding remarks

ZEN welcomes further discussion on economic, social and regulatory changes emerging which will impact the operation and reliability of the electricity network in our commitment to limiting global warming to 1.5°C.

Please don't hesitate to contact me for further information.

Yours Sincerely,

Dan Manderson  
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ZEN Energy