



**OIR**  
Australia's Offshore  
Energy Regulator

# Offshore Renewables Regulation in Australia

University of Western Australia  
Ocean Renewable Energy Unit

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[oir.gov.au](http://oir.gov.au)



# Outline

- The Australian energy landscape
- Overview of the offshore renewables sector in Australia
- The Offshore Electricity Infrastructure Framework





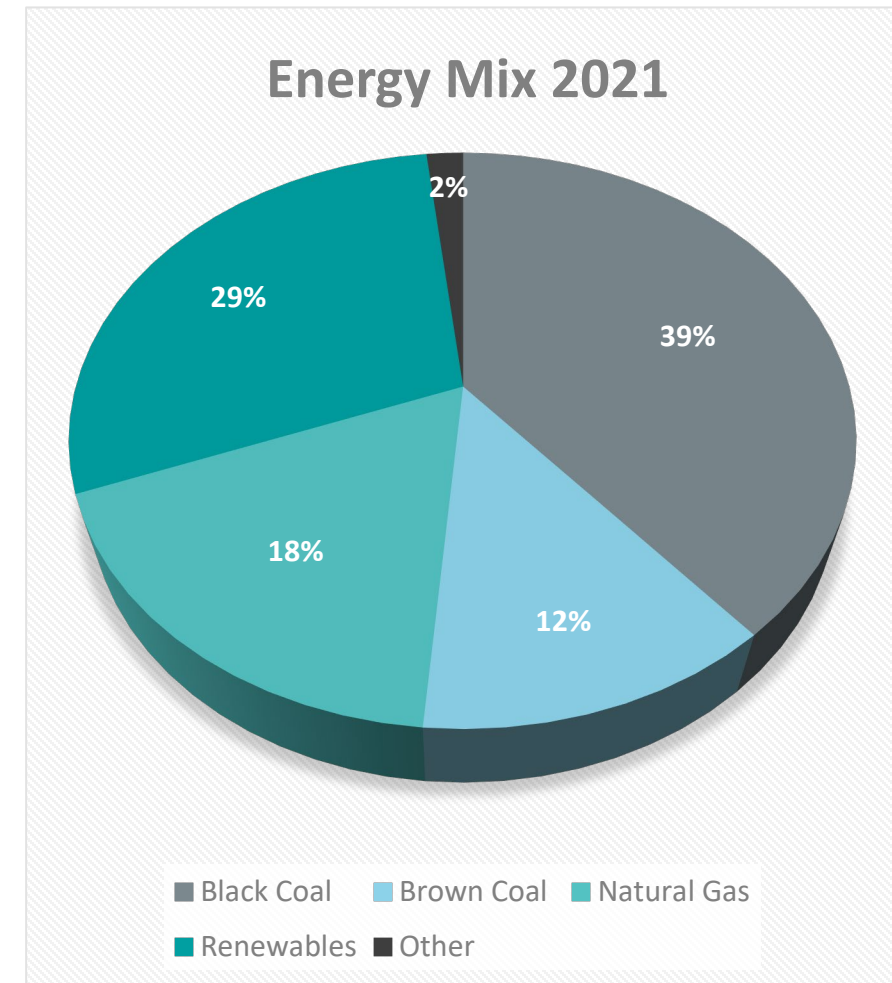
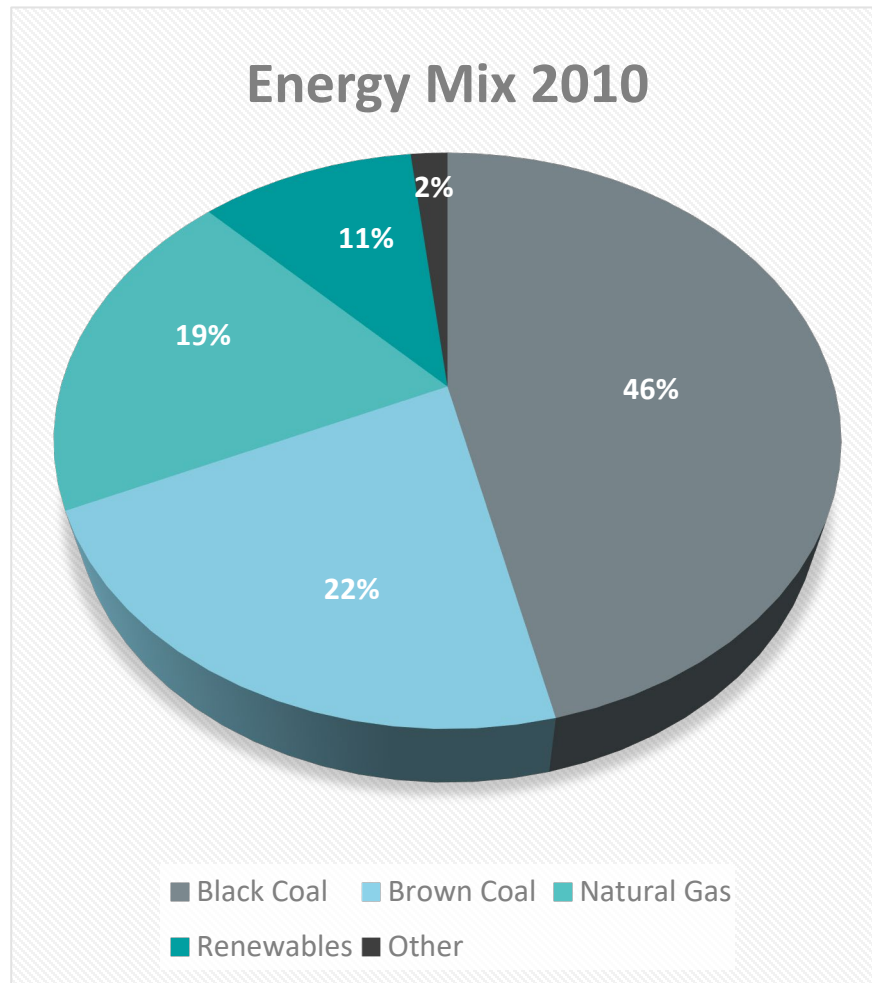
# The Offshore Infrastructure Regulator

- A new regulatory authority with powers and functions under the *Offshore Electricity Infrastructure Act 2021*
- Primarily responsible for work health and safety, environmental management and infrastructure integrity
- Responsibility for regulating Australian Commonwealth Waters >3NM from shore

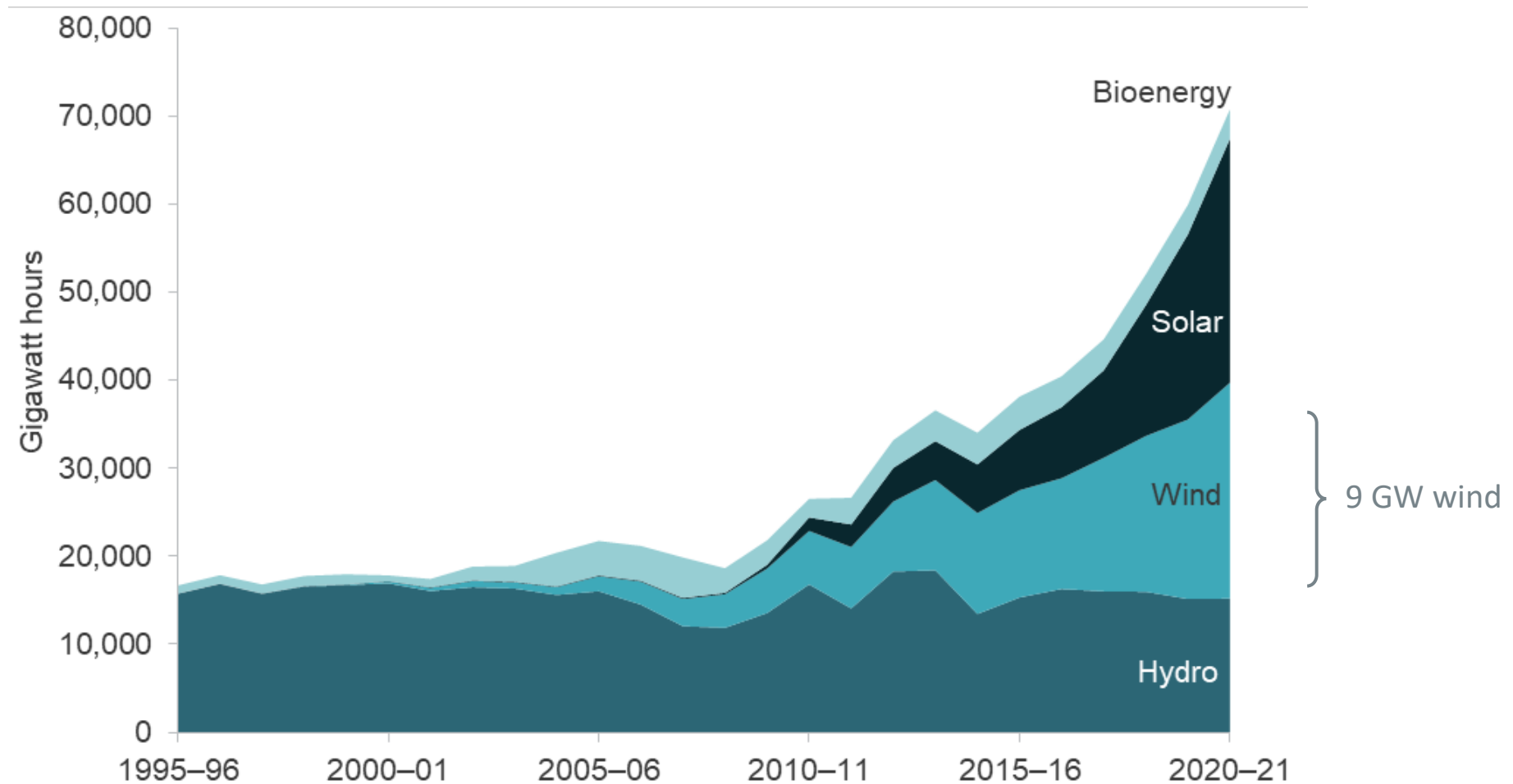


# The Australian energy landscape

# Australia's renewable energy journey



# What's in the mix?



# What's the objective?

2022

The Parliament of the  
Commonwealth of Australia

HOUSE OF REPRESENTATIVES

*Presented and read a first time*

## **Climate Change Bill 2022**

**No. , 2022**

*(Climate Change, Energy, the Environment and Water)*

**A Bill for an Act to set out Australia's greenhouse gas emissions reduction targets, to provide for annual climate change statements, to confer advisory functions on the Climate Change Authority, and for related purposes**

- 43% reduction on 2005 levels by 2030
- Net zero by 2050



# What does net zero look like?



Storage capacity  
**to increase by a  
factor of 30**

(Batteries, virtual power plants, pumped hydro.)



Grid-scale wind and solar  
**to increase  
9-fold**



Distributed solar PV  
**to increase  
5-fold**



Electricity usage from the grid  
**to nearly  
double**



Gas-fired peaking plants  
**to increase**

While current mid-merit plants will all retire within that period.



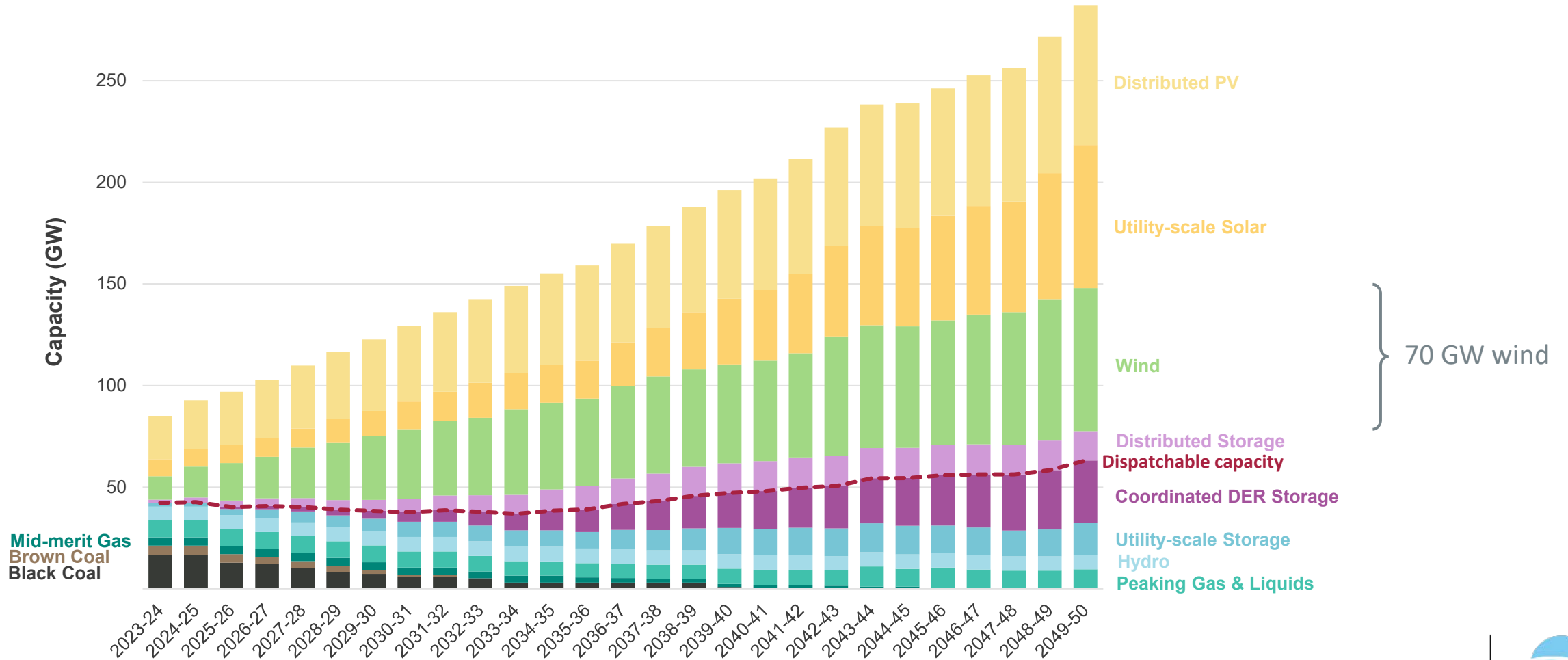
Coal generation  
**to be withdrawn**

Capacity to be retired by:





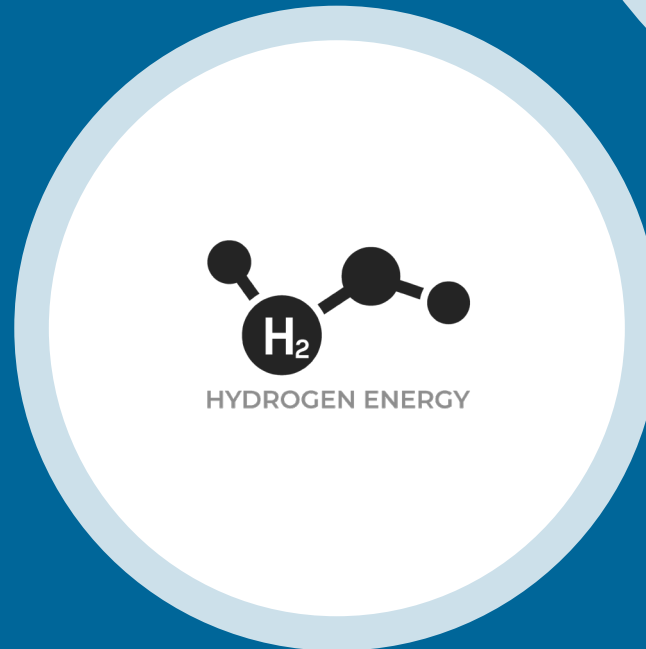
# The role of wind



# Overview of the offshore renewables sector

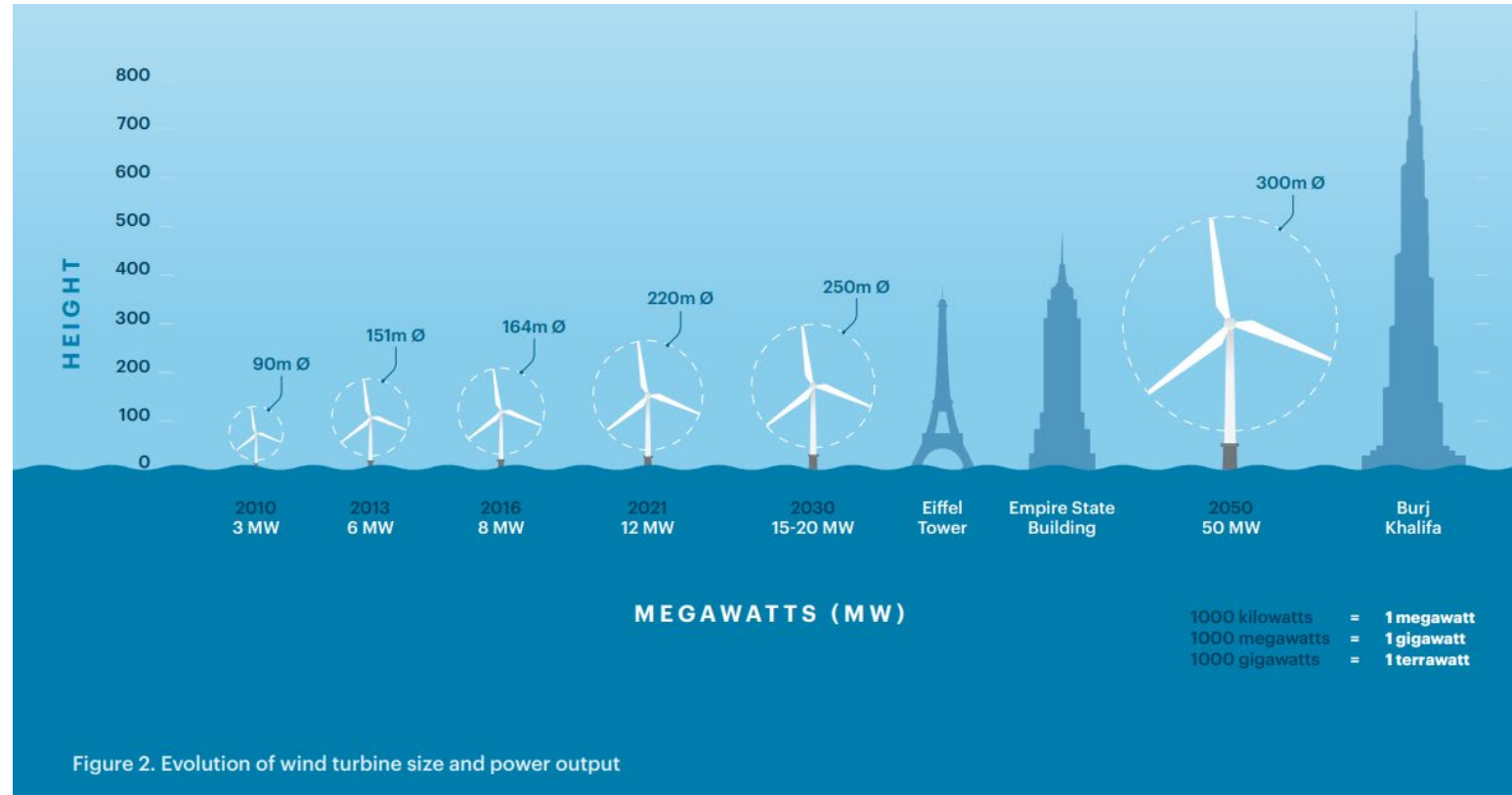
# OFFSHORE RENEWABLE ENERGY TECHNOLOGIES

- Fixed and floating offshore wind
- Wave and tidal power
- Green hydrogen
- Ocean thermal
- Emerging technologies



# Technological advancements – wind energy

- The wind industry has experienced significant technological advancements over the past few decades in terms of size and the generation capacity of wind turbines.
- The latest generation of offshore wind turbines are up to 250 metres tall and have a generation capacity of up to 15 megawatts (MW).
- A 15MW turbine can produce enough electricity in a year to power approximately 20,000 households and save around 38,000 tonnes of carbon dioxide emissions.
- Technology continues to advance at pace with floating offshore turbine technologies allowing access to a far greater range of suitable offshore locations for energy generation.

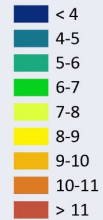




# Supply and demand potential for offshore wind energy


## KEY: Supply


Wind speed  
(metre/second)



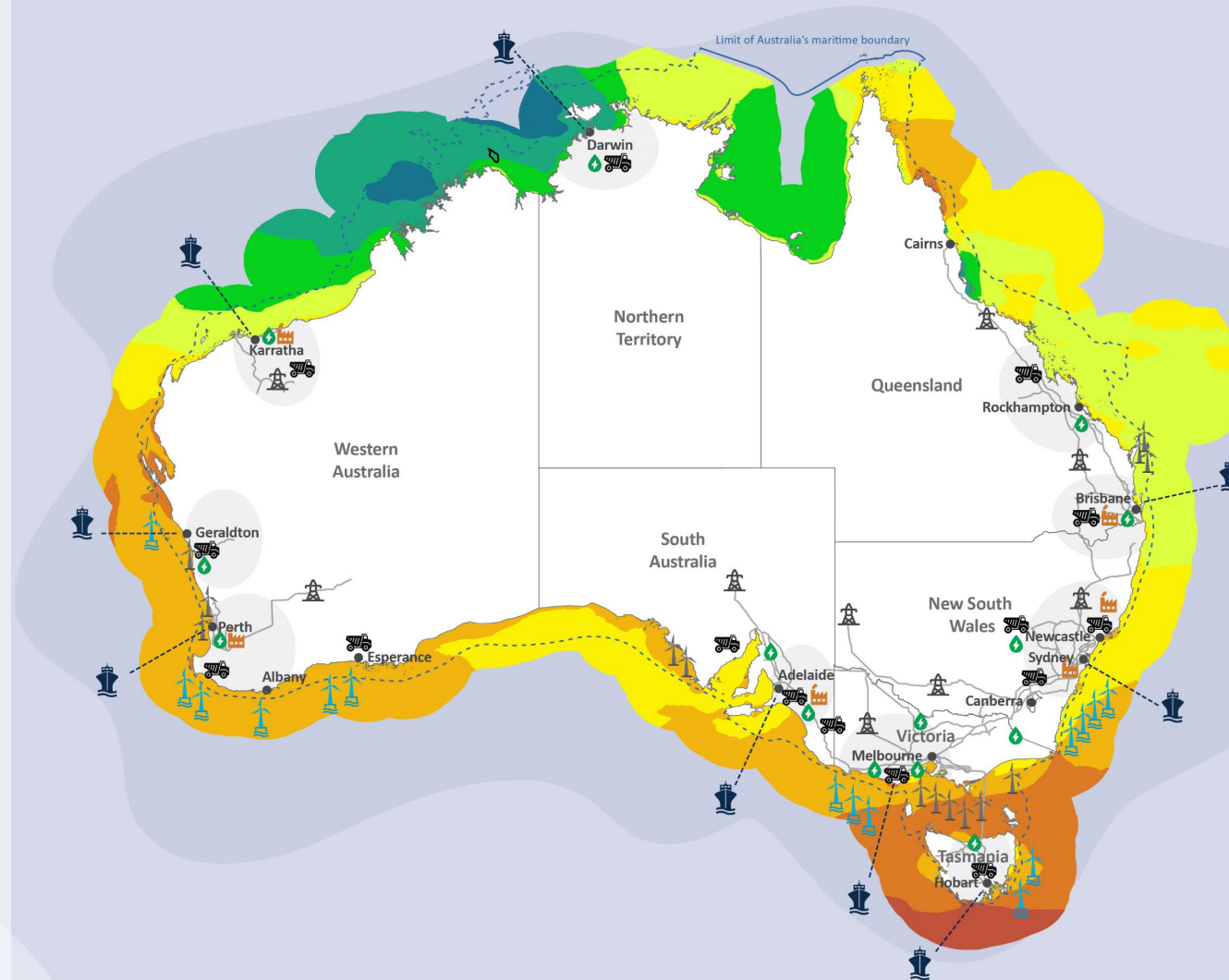
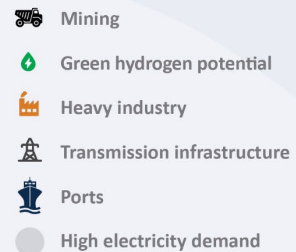
Wind speed data obtained from the Global Wind Atlas.

--- 90 metre mark

 Fixed wind turbines  
Suitable for water depths of up to 90 metres.

 Floating wind turbines  
Suitable for water depths greater than 90 metres.

## KEY: Demand



This map is for illustrative purposes only and is not to scale.



# Why go offshore?

- Larger turbines with higher capacity factors
- Strong, consistent wind speed and direction
- Ability to complement solar generation profile
- Proximity to demand centres and established grid
- Visual amenity, noise pollution and other social impacts reduced
- Potential for reduced impacts to birds, bats and habitats
- Reduced land use competition
- Abundance of space and potential to go further offshore with floating technology
- Reduced transport and logistical constraints

# **The Offshore Electricity Infrastructure Framework**

# The journey so far

## 2019

### Star of the South licence

Government approved licence for technical and environmental studies

### International leading practice

Churchill fellowship to identify leading global practice in offshore renewable regulation for adoption in Australia

### Policy approval & NOPSEMA identified as regulator

PMC provided approval to develop framework for offshore renewable projects. NOPSEMA identified as future regulator of the sector.

### GOWRF

Inaugural meeting of global offshore wind regulators

### IRF

Raised value of collaboration among regulators on offshore renewables safety

## 2020

### Consultation on proposed framework

Consultation with industry, researchers and the community on the proposed framework in early 2020

### Funding

\$4.8 million provided through 2020-21 Federal Budget

## 2021

### Primary legislation passed

OEI Bill and OEI Levies Bill passed through Parliament. Commenced June 2022

### Subordinate legislation

Development of subsidiary legislation in consultation with stakeholders

## 2022+

### Implementation

Development of underpinning policies and procedures

Declaration of area(s) for future development

### Future opportunities

Integrated marine spatial planning

Environmental streamlining

Conferral of State and Territory powers

Emerging industries and technologies

## 2030

### Commissioning

Potential for large-scale commercial projects to be in the commissioning phase by the end of the decade

## 2018

### Emerging Industry

International developers becoming interested in the opportunity offered by Australia  
NOPSEMA identified need to expand its remit to provide to provide effective regulation



# Regulatory oversight and planning



International learnings and standards development



Rapid advancements in technology



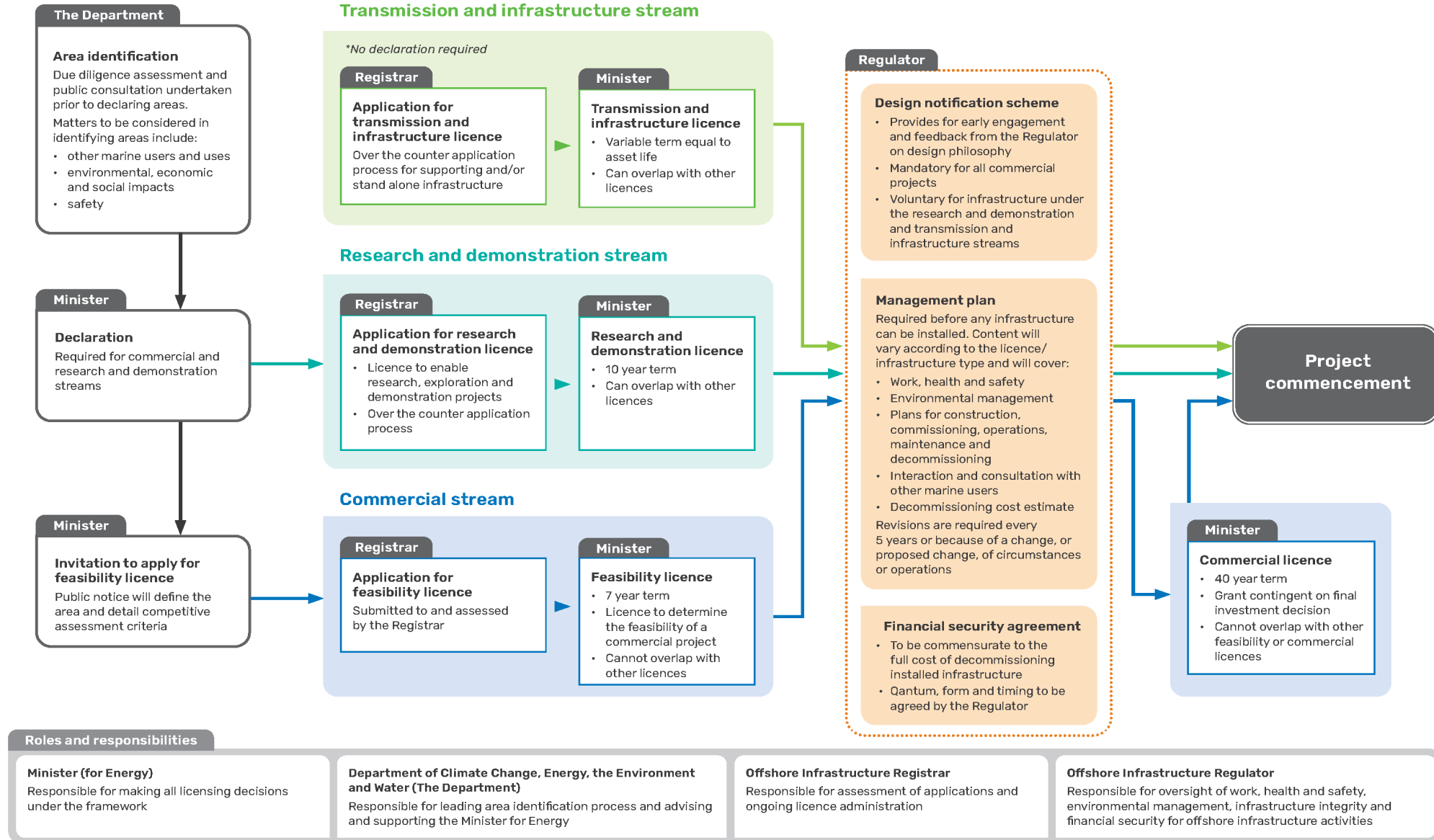
Increased risks as developments increase in complexity, size and move further offshore



Safe and environmentally responsible offshore development

# Offshore Electricity Infrastructure Framework

## Regulatory Process Map



# Australia's offshore renewable energy future

- Areas across the southern part of Australia have been identified
- These will be further investigated with a view to declaration
- First area in Gippsland, Victoria off the south east coast
- Currently open for comment
- Minister can then declare and issue an invitation for licences





# Interest in Australia

## Northern Territory

1 proposed transmission project

### Key



Fixed or floating offshore wind



Transmission infrastructure/interconnectors



Offshore wind and land-based solar development

**32 projects announced  
Up to 45 GW capacity**

## Western Australia

7 proposed projects  
Up to 13 GW capacity

## New South Wales

9 proposed projects  
Up to 16.6 GW capacity

## South Australia

1 proposed project  
Up to 600 MW capacity

## Tasmania

2 proposed projects  
Up to 1 GW capacity

## Victoria

12 proposed projects  
Up to 14.5 GW capacity

*Note: No licences have been granted in Australia to date.  
Potential projects are based on publicly announced industry proposals*



# Questions?

