

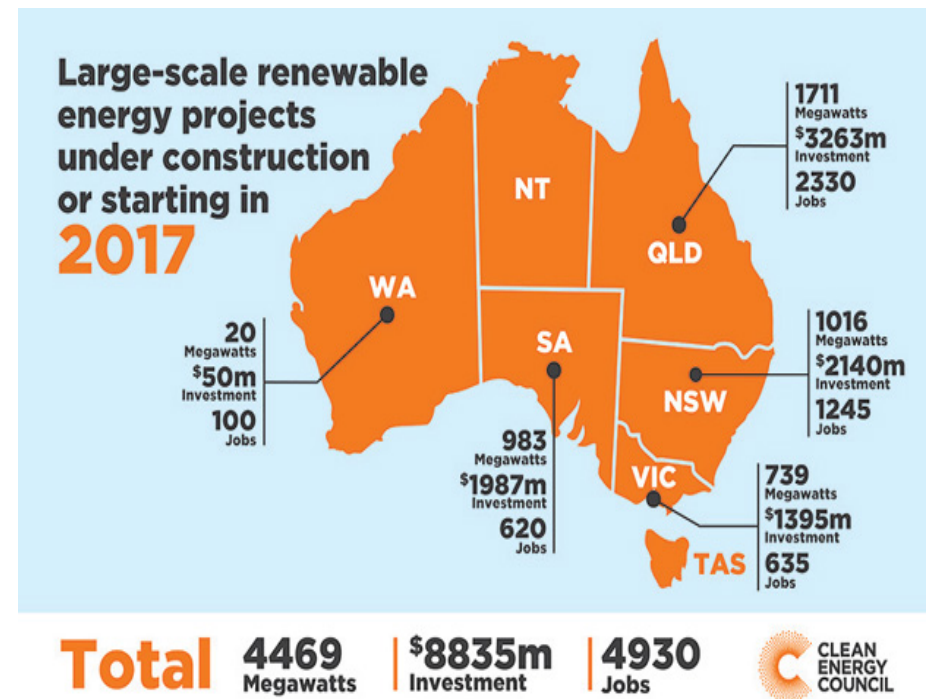
Offshore renewable energy regulation in Australia

Stuart Smith, Chief Executive Officer

August 2019

- Renewables contributed nearly 20% of total Australian electricity generation in 2018, (up from less than 10% two decades before)
- The share contributed by renewables in 2018 includes hydro, (17,452GWh) wind, (16,266) solar, (12,081) and biomass (3,539)
- All substantial developments have been onshore to date

(Source: Australian Energy Update 20, Department of the Environment and Energy)



- Demonstration projects
- Specific approvals for selected commercial-scale projects, without implementation
- Some approvals processes in place but comprehensive regulatory regime in development
- No major commercial-scale projects operating in offshore waters
- First major offshore wind project proposed by Star of the South off Victoria



- Wind farm proposal with exploration site covering a 574km² block, located 10-25km off Gippsland coast
- Installed capacity of up to 2,000MW, sufficient to power around 1.2 million homes
- Includes 25km of submarine cable route from wind farm perimeter and 70km of underground cable route from the coast to the Latrobe Valley
- Project feasibility commenced in 2012
- Exploration licence approved in March 2019
- If feasible and approved, construction to commence in 2022 with stages completed over 6-8 years

Category	Planning process	Example of Approval	Controls
Conservation	Marine Park bioregional planning	Marine Park management zones	Activities restricted in defined areas (e.g. marine parks)
Fisheries	Fisheries Management Plans	Right to fish specific areas or resources	Gear, spatial and/or temporal restrictions on resource access
Aquaculture	Aquaculture zones	Licence to operate in aquaculture zone	Conditions on permitted aquaculture in zone
Marine transport	Maritime navigation plans including Shipping management plans	Installation permit	Exclusions and right of access to shipping lanes
Subsea cables	Subsea cable protection zones	Subsea cable installation permit	Exclusions and right of access for subsea cables
Defence	Defence exercise planning Defence facility exclusions	Defence exercise and facility exclusion zones	Exclusions from areas for defence purposes
Offshore petroleum and Greenhouse gas storage	Acreage release and Offshore Petroleum Proposals	Titles issued, approved safety case/env' t plan	Title conditions/ safety case and env't plan compliance
Offshore renewables	Developer initiated	TBD	TBD



- State/Territory governments responsible for onshore activity and first 3nm. Fed Government responsible for offshore activity 3-200nm
- State/Territory governments responsible for ensuring electricity supply within their jurisdiction with much of the infrastructure privately owned
- Trading within most electricity markets in Australia managed by AEMO
- Most commercial scale offshore renewable projects will be located in Federal waters and supply State/Territory markets managed by AEMO



- Europe is home to the first offshore wind farm and commercial scale tidal power station
- Europe hosts six of the seven largest offshore wind producing countries
- The regulatory models in Europe include many of the highest environmental and safety standards globally
- Europe has particularly high rates of investment and innovation
- China is ranked third by installed generating capacity but has a markedly different socio-political system to Australia

- DEA coordinates all government development work (e.g. spatial planning, strategic assessment, grid connection)
- Government owned TSO undertakes EIA for project and grid connection
- Tenders compete on price with government subsidy via contracts for difference
- All projects receive priority feed-in to the grid
- Operators issued licenses as meet four key milestones
- Independent regulator oversees health, safety, structural integrity (DWEA) and environment (EPA) compliance
- Provision for developer initiated projects

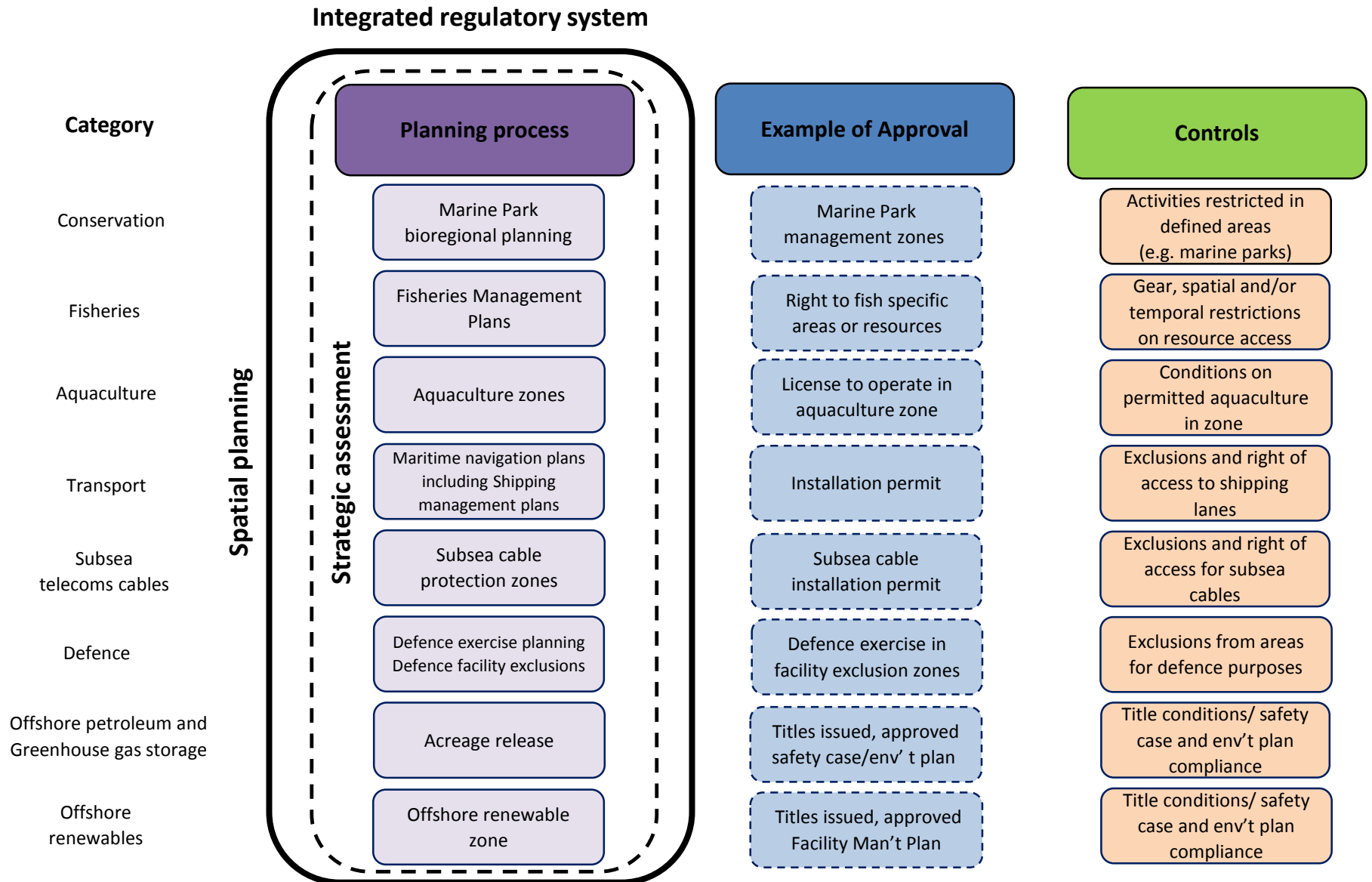
Leading practice in regulation Example B – United Kingdom

- Marine spatial planning undertaken by MMO (below 100MW) and Secretary of State for BEIS (above 100MW)
- Strategic assessment by BEIS with Crown Estate input
- One-stop-shop model in Scotland led by Marine Scotland
- Tenders compete on price (after adjustment for project location, etc) with two-way contracts for difference
- Government/industry agreement on local content, etc
- Developer responsible for grid connection (must divest within two years) and approvals
- No priority feed-in to the grid
- Titles issued by Crown Estate – liability transfers with title
- Independent regulator (HSE) oversees health, safety, structural integrity and environment compliance

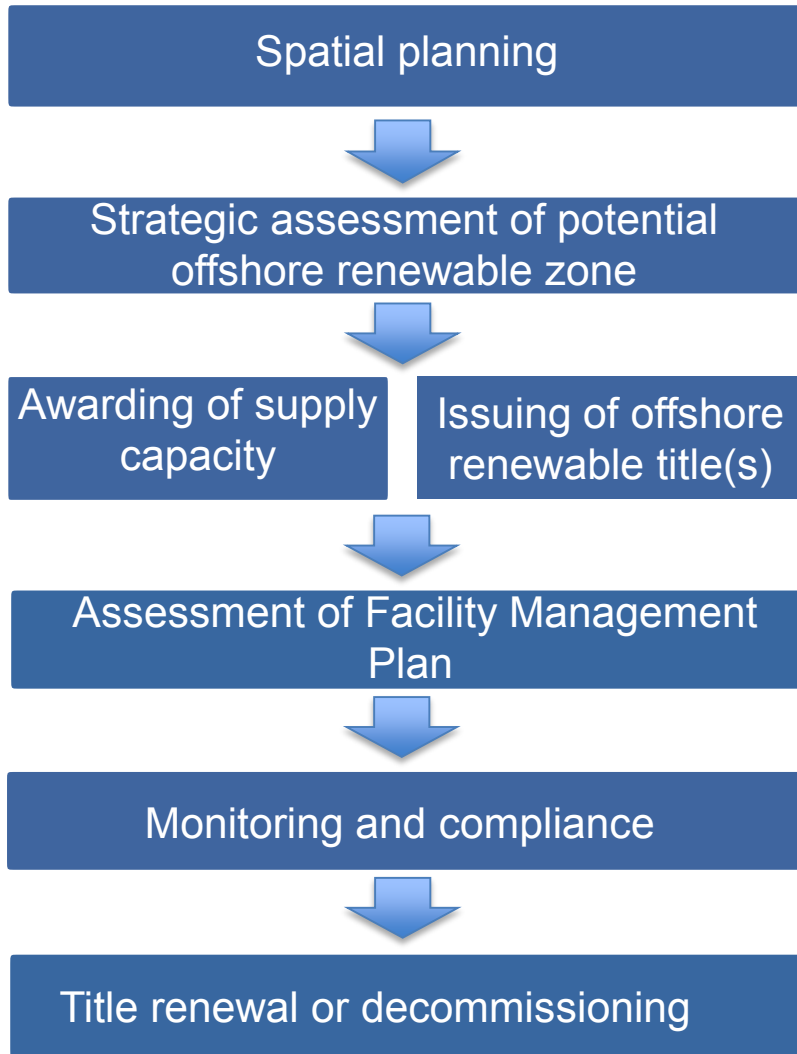
- Comprehensive marine spatial planning process and strategic assessment of zones undertaken by Ministry for Ecological and Solidary Transition – (MEST)
- Tenders initially determined on price, (40%) local content (30) and R&D/environment (30%). (Price now the priority)
- Priority for securing supply chain share successful
- Feed-in tariffs and fixed price subsidies replaced with two-way contracts for difference
- Titles issued by MEST – liability transfers with title
- Development stalled by appeals
- Health and safety regulated by General Directorate for Labour and environmental compliance regulated by MEST

- Comprehensive spatial planning process by the Federal Maritime and Hydrographic Agency (BSH)
- Strategic assessments of offshore wind zones undertaken by BSH ahead of tender
- Tenders compete on price (after adjustment for project location, etc.) with government subsidy for the balance
- All projects receive priority feed-in to the grid
- Titles issued by the Federal Ministry for Economic Affairs and Energy – liability transfers with title
- Installed capacity positive, supply chain capacity negative
- Health and safety, structural integrity and environment compliance regulated by BSH

- Is offshore interest warranted when onshore renewable (and other) resources are abundant?
- Are there viable offshore renewable sites in Australia?
- Should renewables be prioritized over other marine uses?
- Do renewables warrant special arrangements during the infant industry stage to support energy diversity, etc?
- How should approvals for offshore renewables interact with approvals for other marine uses and interests?
- What terms should apply for rights to explore and utilize renewable resources, (including exclusivity of access, duration of rights, confidentiality of exploration data)?



Potential model for offshore renewables



Plan decided by Federal Environment Minister after considering government and other priorities, together with advice from marine interests across all categories

Strategic assessment by Federal Environment Minister using Joint Authority provisions. Decision published with supporting information. DIIS leads stakeholder interaction for assessment, bidding, titling and grid connection

Electricity supply capacity awarded by State Minister based on best bid price(s). Associated title and conditions allocated by Federal Minister using Joint Authority provisions

Facility Management Plan assessed by independent regulator re health, safety, structural integrity and environmental management risks

Compliance with Facility Management Plan obligations monitored by independent regulator with power to advise, inspect, investigate and enforce as appropriate

Title renewed or facility decommissioned for title surrender and liability relinquishment decision by Federal Minister

- Provision for the relevant Minister to issue the necessary titles and licenses in exceptional circumstances for developer initiated projects
- Such titles should be conditional on the developer:
 - Having regard to spatial planning processes
 - Undertaking an appropriate strategic assessment in accordance with published criteria
 - Being advised of applicable subsidies
 - Securing arrangements for grid connection where appropriate
 - Securing acceptance of the relevant Facility Management Plan
- These conditions should be commensurate with risk

Work area	Activity	Decision maker	Lead agency
Planning	Spatial planning	Federal Minister for the Environment	DoEE
	Strategic assessment of Offshore Renewable Zones	Federal Minister for the Environment (via Joint Authority arrangements)	DIIS*
Joint approvals	Pre-qualification (for technical and financial competence)	Federal Minister for Resources (via Joint Authority arrangements)	NOPTA
	Bid determination for acreage	State Minister (via Joint Authority arrangements)	Relevant State agency
	Awarding of titles	Federal Minister for Resources (via Joint Authority arrangements)	NOPTA
Independent regulation	Grid connection	State Minister (via Joint Authority arrangements)	Relevant State agency
	Facility Management Plan acceptance	NOPSEMA	NOPSEMA
	Regulatory oversight against Facility Management Plan	NOPSEMA	NOPSEMA
Joint authority approval	Title renewal or surrender	Federal Minister for Resources (via Joint Authority arrangements)	NOPTA

* Department of Industry Innovation and Science to also perform coordination and consultation role of Lead Offshore Renewables Agency

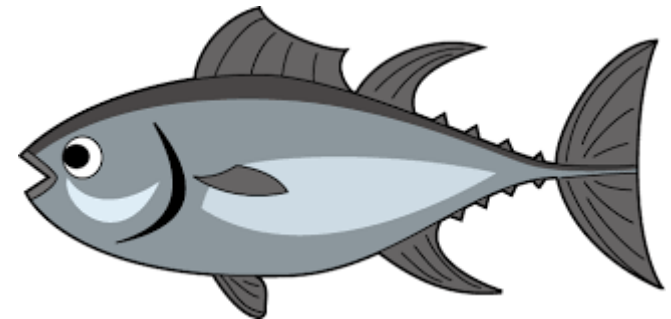
Thank you.

Questions?

- State based approvals with wide variation between regimes
- Multi-category spatial planning often integral to approvals
- Strategic assessment used in some areas
- Project specific assessment may include consideration of:
 - Economic factors including land access; financial subsidies, imposts and liabilities; interface with electricity markets
 - Health, safety and structural integrity
 - Environmental factors including impacts during development, construction, operation and decommissioning
- Regulatory oversight variable and typically under general industry provisions

- Approvals in State waters typically rely on onshore arrangements or improvised approvals
- Approvals in Commonwealth waters are largely reliant on ministerial approval
- Leading regulatory frameworks internationally feature government support and processes for:
 - spatial planning, strategic assessment, grid connection, bid determination, allocating titles, consenting and regulatory oversight
- These processes are already applied nationally for other industries and activities

- Most fisheries in Australia managed by States to 200nm
- Arrangements vary widely
- Prescriptive model typically used
- Single regulator in most markets determines resource and access
- Subject to limited marine spatial planning and strategic assessment
- All activities permitted unless specifically excluded
- Non-exclusive right of access to fish via license



Marine approvals in Australia Example 2 – Offshore petroleum

- Most resources administered via Joint Authority to 200nm
- Consistent model applied nationally
- Objective based model
- Regulatory approvals split between economic and other regulators
- Titleholder determines resource and regulator determines access based on spatial planning and strategic assessment
- Only activities covered by accepted plan permitted
- Exclusive rights to access resource via permit and acceptance of plans to ALARP



- Would strategic assessment of zones for renewables support development and on what terms?
- Who should be responsible for grid connection?
- What form of regulation is appropriate for offshore renewables projects, including:
 - National, State or Joint Authority model?
 - Prescription vs objective based?
 - Single or multiple regulators for economic, social and environmental factors?
 - Decision making by elected officials or subject experts?
 - Extent of acceptable regulatory burden, (commensurate with risk, scale of the industry and performance)?

A typical offshore renewables project in Federal waters, supplying electricity into a State grid will have:

- Fed Min for Environment – determines spatial planning and strategic assessment processes via DoEE
- State Min for Energy – determines the generation capacity to be offered and subsidies (if any)
- Fed Min – determines title application under Joint Authority provisions with State Minister
- Fed department (LORA) – provides single point of stakeholder contact for strategic assessment, bidding, titling and grid connection. Administers and advises Fed and State Ministers on titles via NOPTA

- ARENA – provides funding to accelerate renewable energy developments
- Wind Commissioner – inputs to assessment processes and provides feedback loop for regulators
- NOPSEMA – assesses Facility Management Plans, ensures compliance with accepted FMPs. Advises Fed Min on licence conditions and decommissioning
- AEMO – administers most electricity markets that will be supplied by offshore renewables
- Clean Energy Regulator – administers schemes to measure, manage, reduce or offset carbon emissions

NOPSEMA introduction

Stuart Smith, Chief Executive Officer

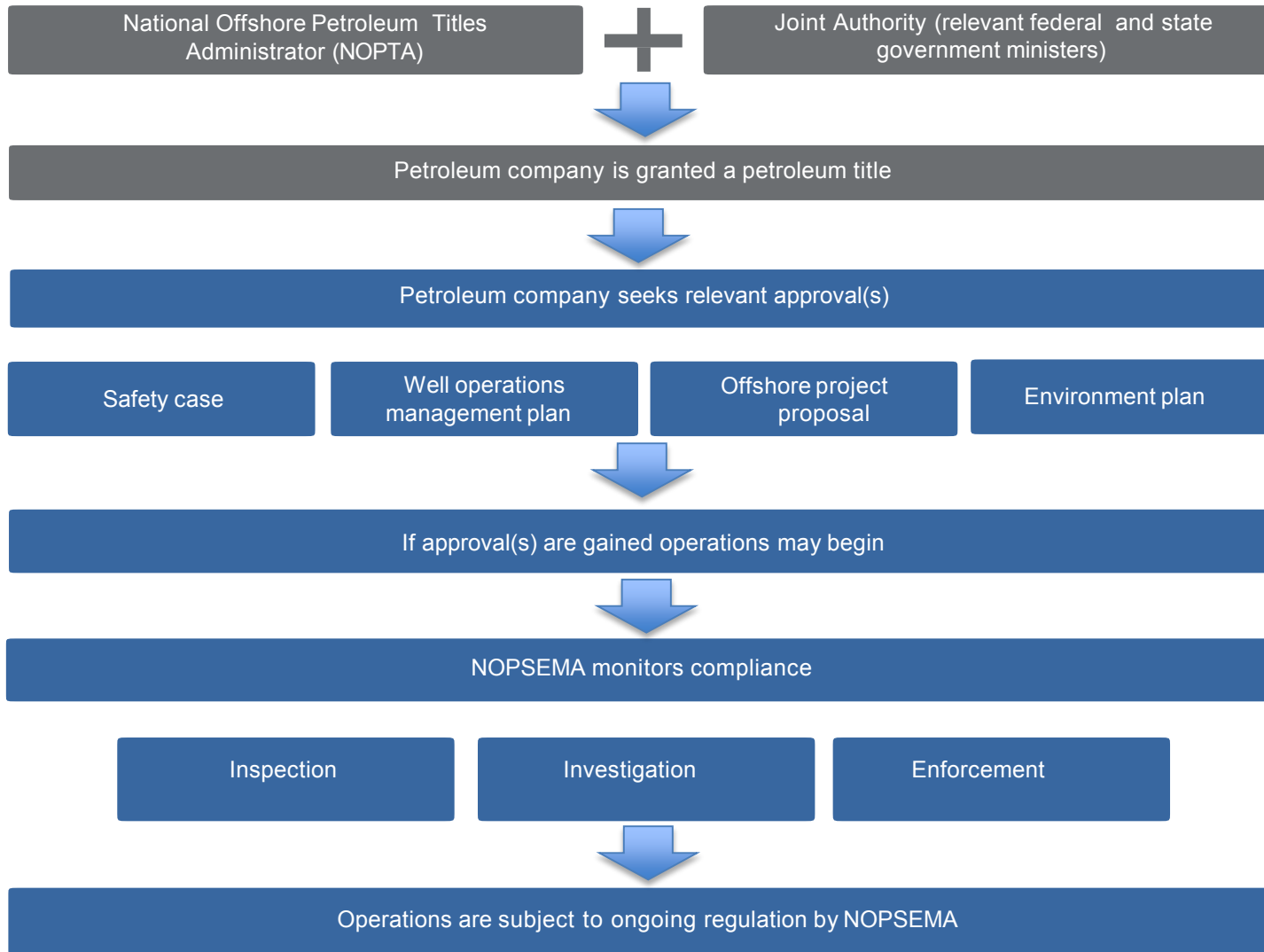
July 2019

- National regulator for safety, well integrity and environmental impacts from offshore petroleum projects and greenhouse gas storage projects
- Statutory authority established under the *Offshore Petroleum and Greenhouse gas Storage Act 2006*
- Independent decision maker on regulatory matters
- Administers an objective-based regulatory model
- Staffed by experts with extensive technical knowledge and industry experience
- Fully cost recovered via fees, charges and levies
- Responsible for all Commonwealth waters (3-200nm) and coastal waters (0-3nm) where powers are conferred

- Risk creator owns the risk and best placed to propose way to manage
- Comprehensive risk management plans submitted to NOPSEMA for assessment and possible acceptance
- Obligation on duty holder to:
 - ensure compliance with commitments in accepted plans
 - pursue continuous improvement
- Regulator also monitors compliance (eg via inspections) to supplement duty holder responsibilities
- Regulator uses enforcement powers and prosecutes
- Regulator also has an advice and education function

- Originally established as the national offshore petroleum safety regulator (NOPSA) in 2005
- Well integrity responsibilities added in 2010
- Environmental management responsibilities added to form NOPSEMA in 2011
- Environmental approvals extended with deemed EPBC Act approval in 2014
- Commenced first assessment of offshore greenhouse gas storage in 2018
- Commenced providing advisory services for offshore renewables in 2019

- Have been active participant in key regulatory bodies for offshore energy including:
 - safety (IRF)
 - environment (IOPER)
 - resource management (IUF)
- Invited as inaugural member of Global Offshore Wind Regulators Forum 2019
- Undertaking review of leading international practice for the regulation of offshore renewables



More information about the assessment process may be found at:

- nopta.gov.au; and
- nopsema.gov.au

Legend

- NOPSEMA's remit
- Outside NOPSEMA's remit



Australian Government
**Department of Industry,
Innovation and Science**

Department of Industry, Innovation and Science (DIIS) identifies offshore areas where petroleum exploration is permitted and designates these areas as vacant acreage

Through designating marine parks the Department of the Environment can prohibit petroleum exploration in areas with high conservation values, these may include World Heritage Areas and Marine National Parks. For more information see parksaustralia.gov.au



Petroleum companies apply for petroleum titles to explore vacant acreage

Petroleum companies can apply for a short term title to conduct seismic and other surveys or they can nominate vacant acreage to be release for bidding to acquire exclusive rights to explore for petroleum in an area. For more information see nopta.gov.au and petroleum-acreage.gov.au



Australian Government
**National Offshore Petroleum
Titles Administrator**

The National Offshore Petroleum Titles Administrator (NOPTA), DIIS and the Joint Authority (federal and state government resources ministers) work together to assess applications and bids and grant petroleum titles



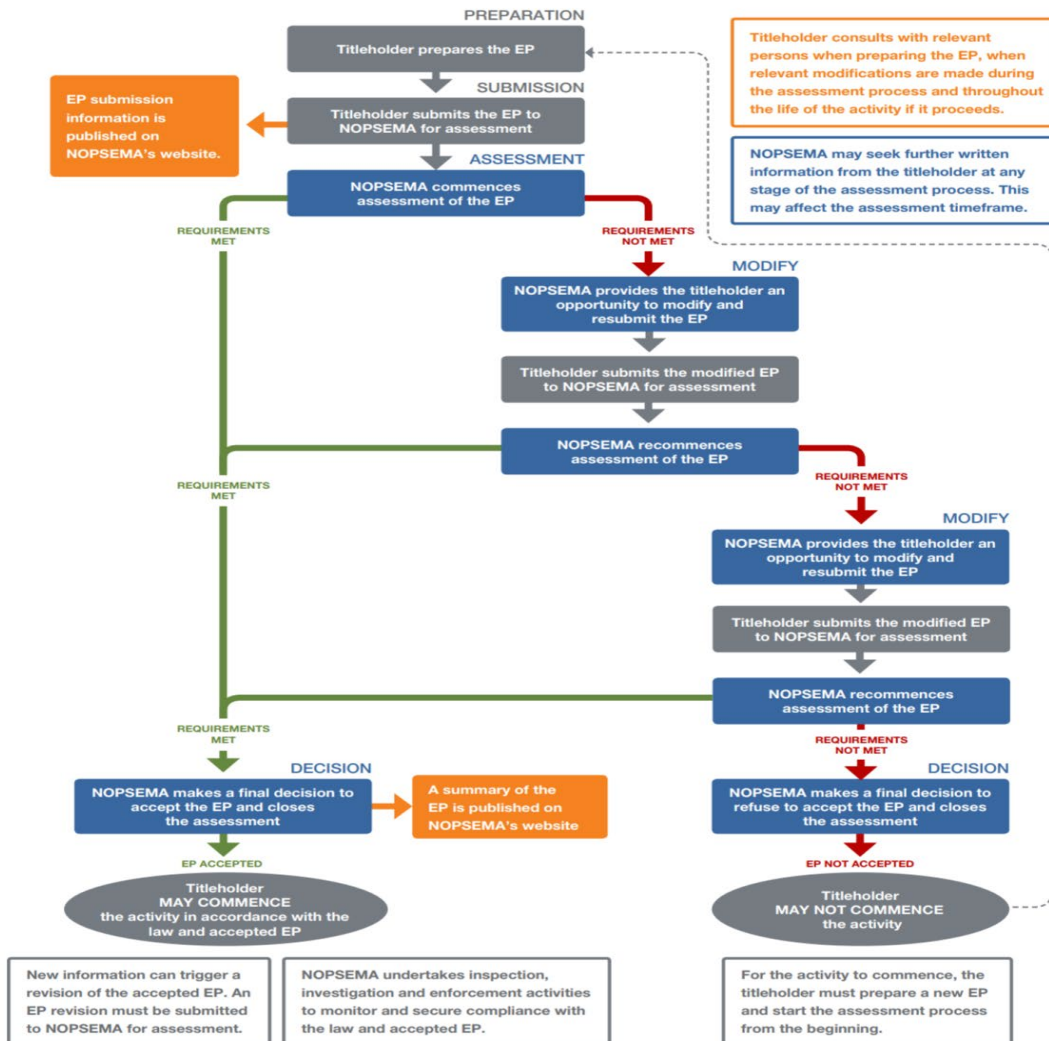
Petroleum company is granted a title

Where a petroleum company bids on vacant acreage and is subsequently granted a title the company makes a commitment to conduct surveys and/or drill wells in a specified time period.

Assessment process for environment plans

The infographic below provides a broad overview of the environment plan (EP) assessment process. Plans are assessed against the requirements of the Environment Regulations. Plans vary in their complexity and scope, as such assessment timeframes will vary. For more information, visit nopsema.gov.au.

- Legend
- NOPSEMA's remit
 - Outside of NOPSEMA's remit
 - Consultation



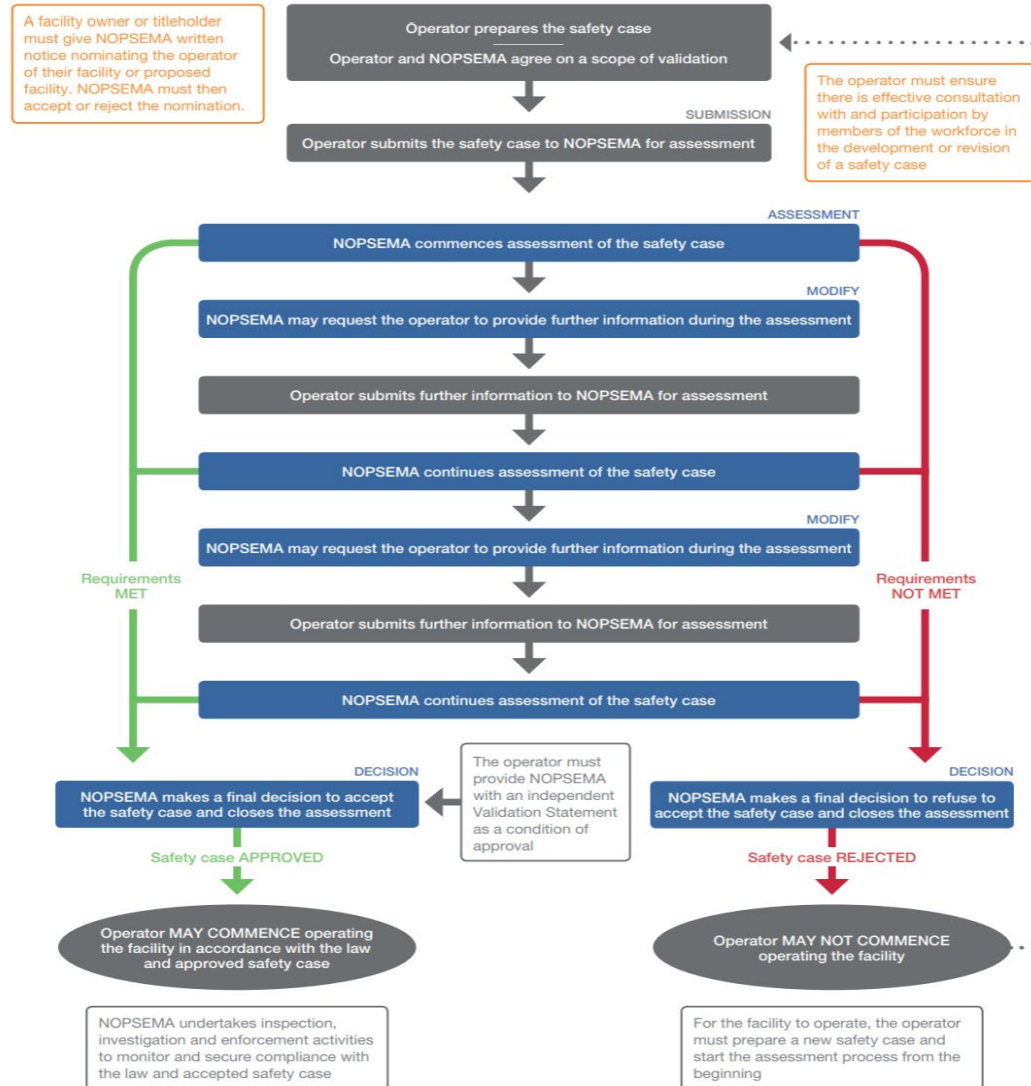
Note: The process for environmental assessment is to be modified from 25 April 2019 with the consultation process supplemented with a requirement for release of the full environment plan for public comment prior to submission to NOPSEMA

Assessment process for the safety case

The infographic below provides a broad overview of the safety plan assessment process. Each safety plan is assessed against the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009. Assessment timeframes will vary subject to the complexity and scope of the safety case.

Legend

- NOPSEMA
- Operator
- Consultation

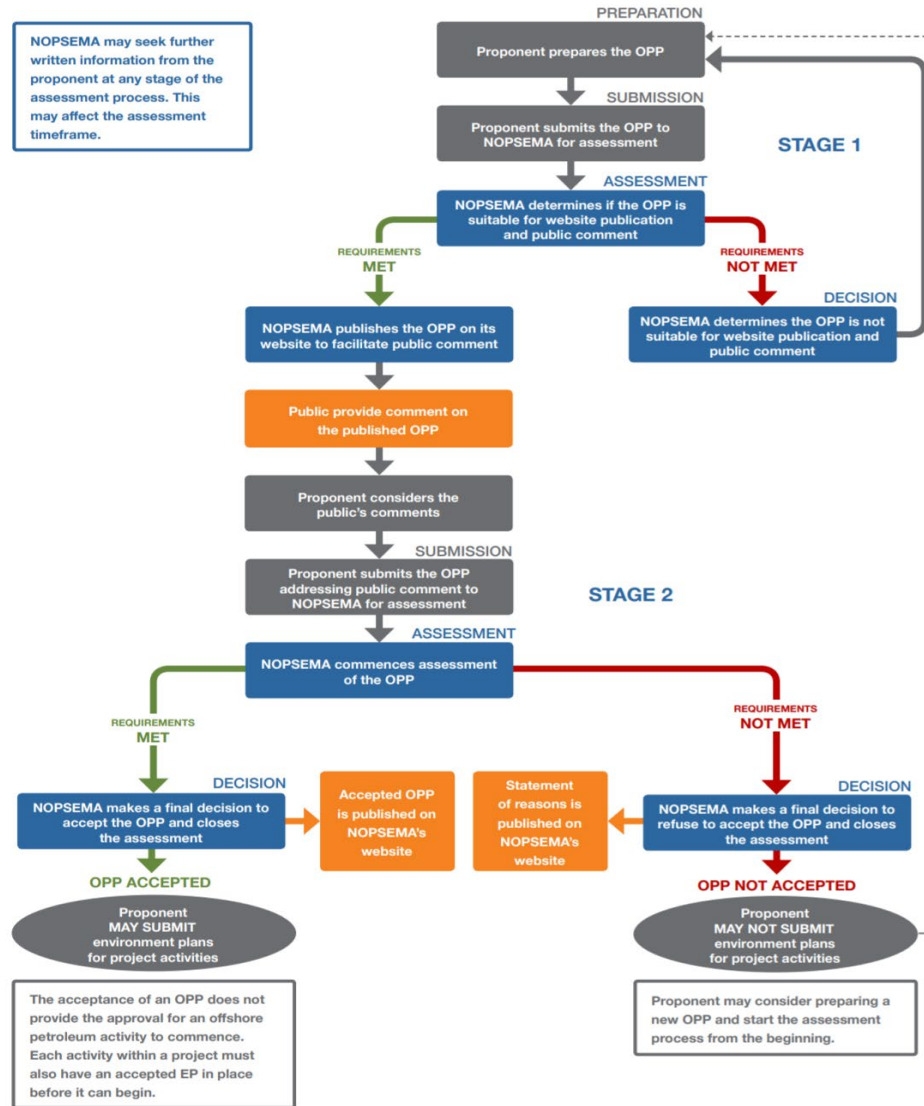


Offshore petroleum proposal (OPP) assessments

Assessment process for offshore project proposals

The infographic below provides a broad overview of the offshore project plan (OPP) assessment process. Proposals are assessed against the requirements of the Environment Regulations. Proposals vary in their complexity and scope, as such assessment timeframes will vary. For more information see nopsema.gov.au.

- Legend
- NOPSEMA
 - Proponent
 - Public comment / publication



Offshore decommissioning approvals

