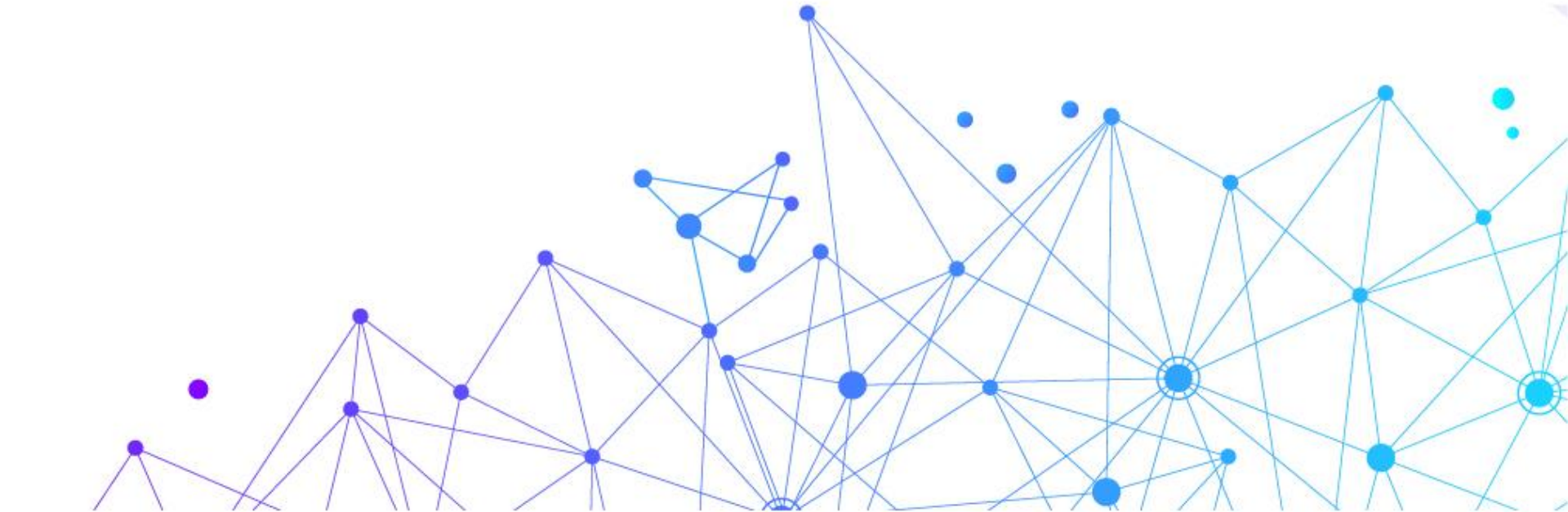
Energy Transformation Taskforce

Energy Transformation Strategy

Work Program Overview

1 August 2019



AGENDA

1. Background – Why is an Energy Transformation Strategy needed?
2. Work program overview
3. Energy Transformation Taskforce

Background

Why is an Energy Transformation Strategy needed?

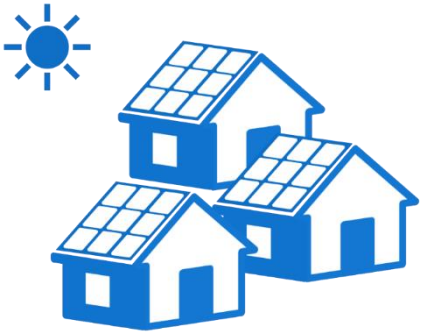
THE ENERGY SECTOR IS TRANSFORMING

An unprecedented transformation is underway in how electricity is produced and used

- Rapid uptake of large and small-scale low-emissions technologies
- Driven by new technologies, falling costs and customer preferences

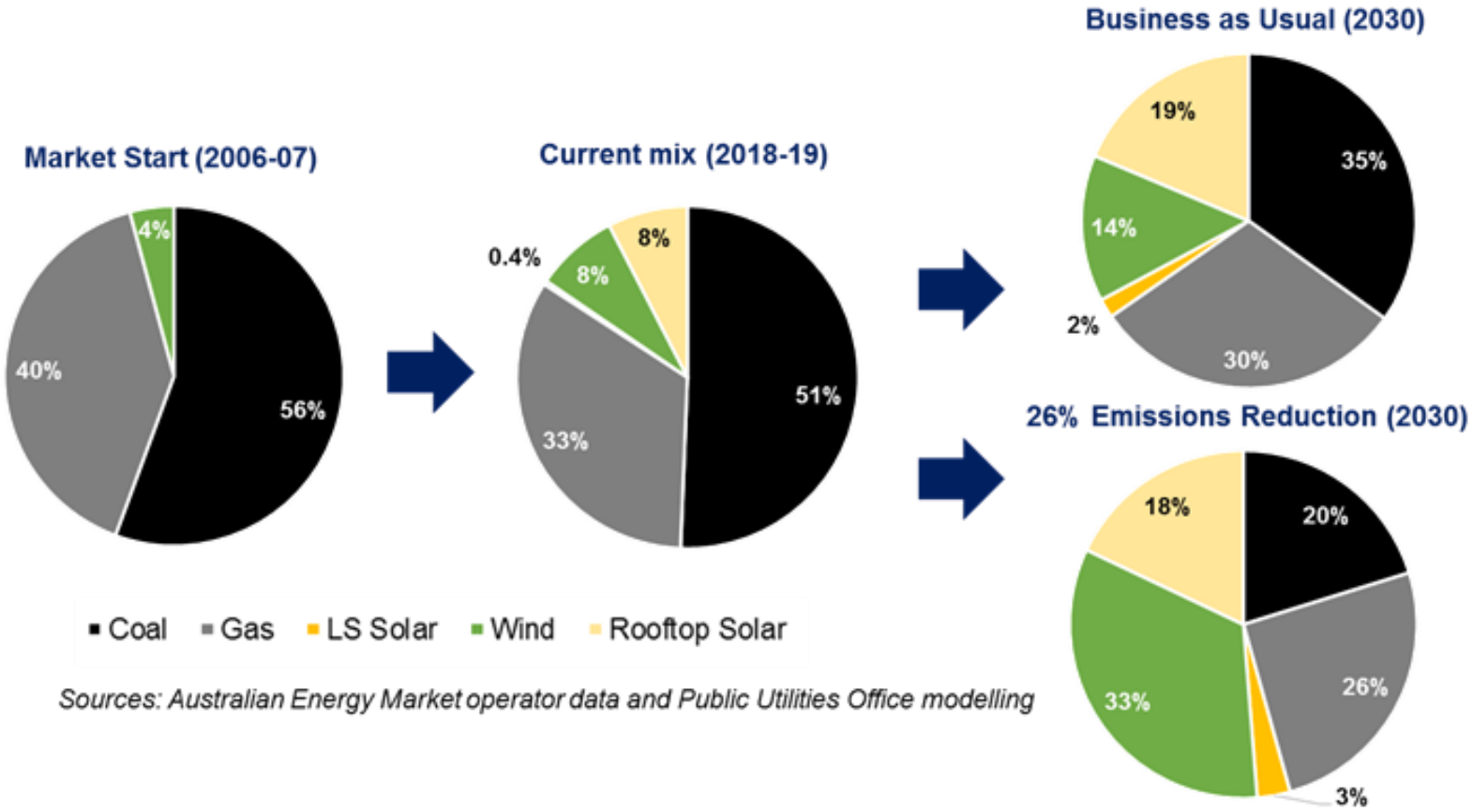
Renewables account for around 16% of electricity generated in the SWIS

Over a quarter of WA households have solar PV



THE ENERGY SECTOR IS TRANSFORMING

Change is underway and inevitable



Sources: Australian Energy Market operator data and Public Utilities Office modelling

But our regulatory and market frameworks have not kept up

THERE ARE BENEFITS

Transformation presents opportunities

Lower emissions

Low marginal cost energy

More options for customers

More suitable supply solutions for regional and remote locations

…and significant challenges

BUT ALSO CHALLENGES

POWER SYSTEM

Growing levels of:

- power system variability
- two-way power flows
- thermal plant movement
- System Management intervention

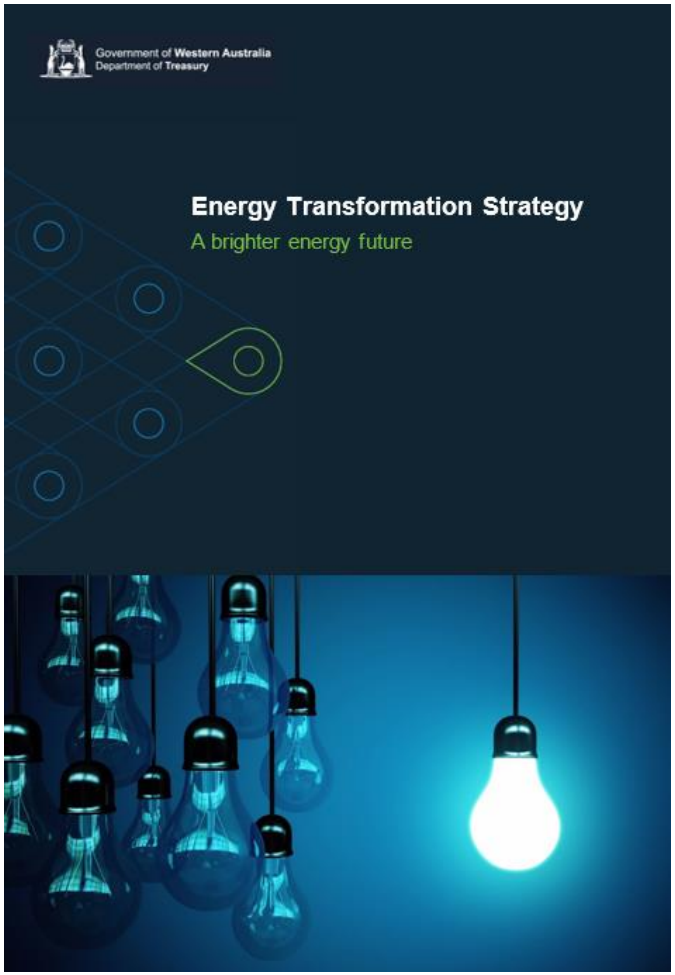
NETWORK

- Voltage over technical limits
- Frequency outside technical limits
- Reverse power flows put pressure on equipment

Unless urgent action is taken to manage the integration of renewable and distributed energy resources, the rapid uptake of these new electricity resources will lead to higher electricity costs and a less secure and reliable electricity supply.

… AEMO predicts between 2022 and 2024

ENERGY TRANSFORMATION STRATEGY
VISION AND OBJECTIVES



Our vision is to provide safe, secure, reliable, low-emission power to Western Australian households and businesses at the lowest sustainable cost, while allowing new technology to connect and giving people more control over their electricity use.

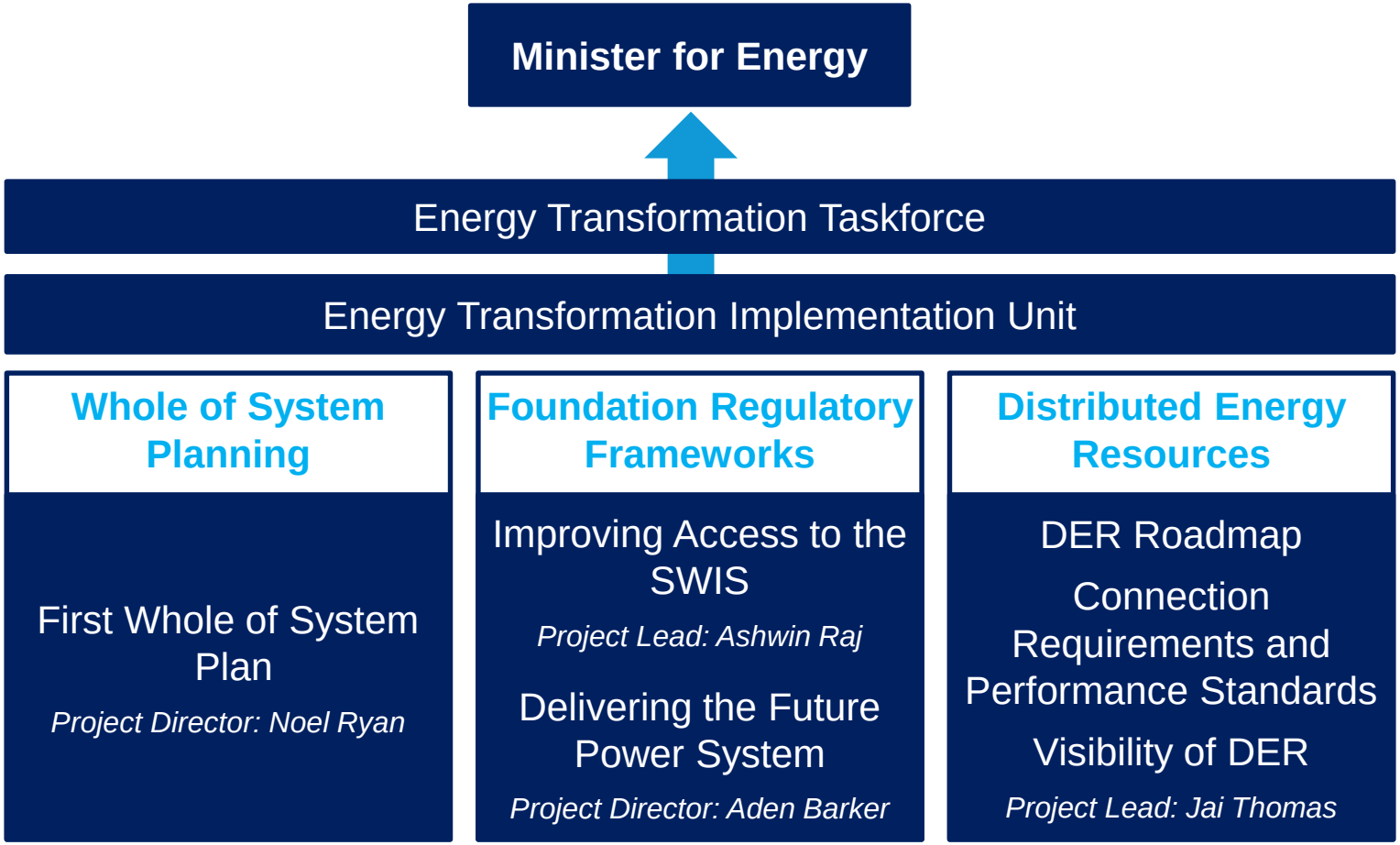
Our objectives are to:

- Maintain a secure and reliable electricity supply
- Ensure affordable electricity for households and businesses
- Reduce energy sector emissions
- Transition affected workers in the Collie region
- Promote local jobs and growth

Work program overview

SCOPE

Two year program of work across three interrelated areas



WHOLE OF SYSTEM PLAN
DELIVERABLES

Whole of System Plan Report

Publication which outlines the:
- scenarios considered
- modelling approach taken
- network, system and market outcomes of each scenario
- information and evidence to support efficient investment

Fact Sheets, Infographics and other digital content (TBC)

Visually engaging content to enable the broader community to understand the changes underway in the energy sector

WOSP should demonstrate how to deliver electricity supplies at lowest sustainable cost and emissions within the reliability and security standards over a 20 year period.

Guide **policy, market and regulatory changes**

Guide **future investment** in the short-term (least regrets) and medium / long term (less certain)

Inform stakeholders (market participants, customers, future investors, regulators and Government) and help them **make informed decisions**

WHOLE OF SYSTEM PLAN

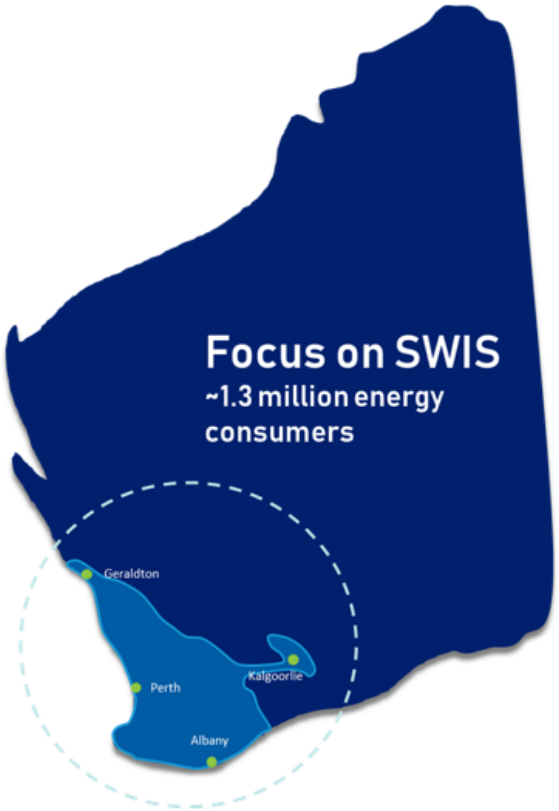
KEY MILESTONES

Date	Milestone
Phase 1 – Develop and agree scenarios	
June 2019	Develop modelling scenarios, inputs and assumptions
July 2019	Industry workshop on modelling scenarios
July 2019	Consultation with MAC on modelling scenarios, inputs and assumptions
July 2019	Taskforce endorsed final scenarios
September 2019	Update MAC on final scenarios, inputs and assumptions
Phase 2 – Deliver forecasts, technical assessment and modelling	
October 2019	Finish transmission network/system technical assessment using finalised scenario forecasts
December 2019	Least cost expansion simulation model built
December 2019	Present technical assessment to MAC
Phase 3 – Develop capacity/network recommendations and investment plan	
February 2020	Identify initial capacity mix and network configuration recommendations
March 2020	Update MAC on preliminary generation and network plans
April 2020	Run dispatch simulation model to verify SWIS/network investment recommendations
April 2020	Develop SWIS/network investment plan
June 2020	Present on SWIS/network investment plan to MAC
June 2020	Industry workshop on preliminary modelling outcomes
Phase 4 – Deliver Whole of System Plan	
June 2020	Whole of System Plan drafting complete
July 2020	Taskforce considers WOSP to be submitted to Minister for Energy

DISTRIBUTED ENERGY RESOURCES

DELIVERABLES

- DER Roadmap
- DER Register
- DER Connection Guidelines



DER projects will seek to:

- mitigate the impact of a high-DER future on network and system security and reliability
- enable DER to be used to support the operation of the system and potentially reduce the cost of grid supplied electricity in the future
- provide a path for the identification and coordination of significant DER projects across the industry.

DISTRIBUED ENERGY RESOURCES ROADMAP

KEY MILESTONES

Date	Milestone
Mid-June 2019	Early 1:1 scoping sessions with key stakeholders commenced
Late-June 2019	Energy Transformation Implementation Unit - AEMO - Western Power Working Group commenced
30 July 2019	Initial scoping workshop with industry
August 2019	Current state assessment completed
August 2019	Project stocktake completed
August-September	Continuing stakeholder engagement – 1:1 meetings and workshops on specific issues
Late-September 2019	Key report components presented to Taskforce
Mid-November 2019	Draft Roadmap completed
Early-December 2019	Taskforce approval of Final Roadmap
Early 2020	Final Roadmap publication

FOUNDATION REGULATORY FRAMEWORKS

IMPROVING ACCESS TO THE NETWORK DELIVERABLES

The **implementation of constrained network access** involves the following main elements.

1. Address transition of existing network access contracts into a new constrained access model
2. Implement a new process to allocate capacity credits to reflect the constrained nature of the grid
3. Amend the Wholesale Electricity Market Rules and the *Electricity Networks Access Code 2004* to implement constrained access

IMPROVING ACCESS TO THE NETWORK

KEY MILESTONES

Date	Milestone
August 2019	In-principle support from Taskforce for the proposed constrained access implementation approach.
August – September 2019	Industry consultation on proposed constrained access implementation approach.
October 2019	Taskforce endorsement of proposed constrained access implementation approach.
November 2019	Government endorsement of the constrained access implementation approach.
Q4 2019 – Q1 2010	Industry consultation on regulatory amendments.
Mid 2010	Regulatory amendments implemented.

FOUNDATION REGULATORY FRAMEWORKS

DELIVERING THE FUTURE POWER SYSTEM

DELIVERABLES

Modernise Wholesale Electricity Market arrangements

• Changes to accommodate constrained network access • Enable participation of new technologies

(i.e. utility scale batteries)

Improve power system security and reliability framework

(i.e. monitoring and compliance)

Establish a new framework for Essential System Services

(often referred to as Ancillary Services)

• Design of new Essential System Services market and effective means for their supply

Establish a regulatory framework for future Whole of System Planning

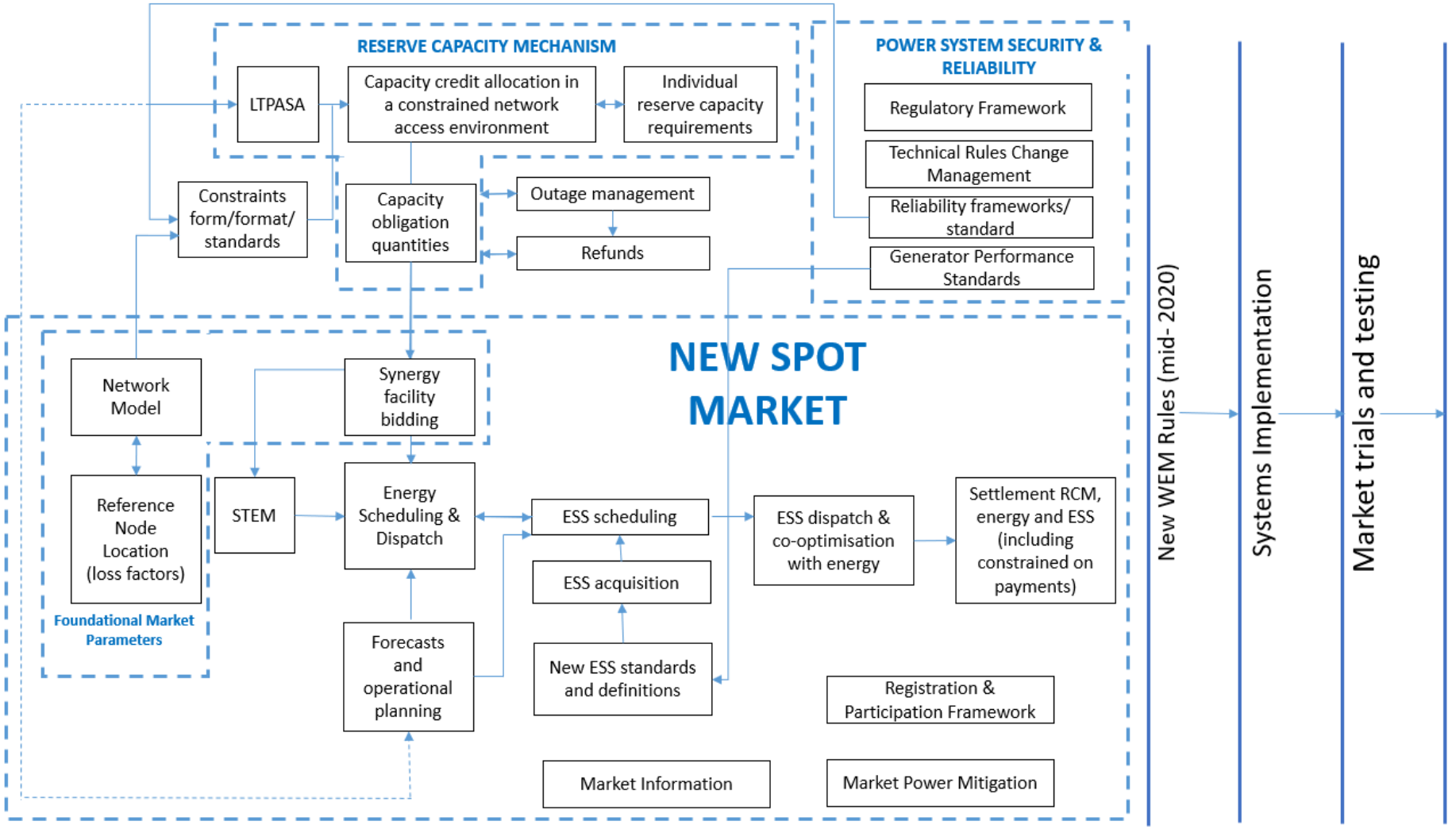
DELIVERING THE FUTURE POWER SYSTEM

KEY MILESTONES

Date	Milestone
July 2019 – January 2020	• Design of new market and power system security and reliability arrangements. • Consultation with stakeholders through the Transformation Design and Operation Working Group and other forums. • Supporting modelling of new market and power system security and reliability framework design. • Decision-making by Taskforce on design recommendations to be implemented through changes to regulations and Market Rules.
January 2020 – mid-2020	• Consultation on draft regulations and market rules • Progressive implementation of facilitating Market Rules, regulatory changes, and new power system security and reliability framework. • Commencement of new market system (ICT) design and build.
Q3 2020	Minister for Energy finalises and makes the new Market Rules.
Q3 2020 – October 2022	• Market systems build. • Industry market testing.
1 October 2022	Commencement of new market arrangements.

FOUNDATION REGULATORY FRAMEWORKS

DELIVERABLES



Energy Transformation Taskforce

ENERGY TRANSFORMATION TASKFORCE

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Questions?