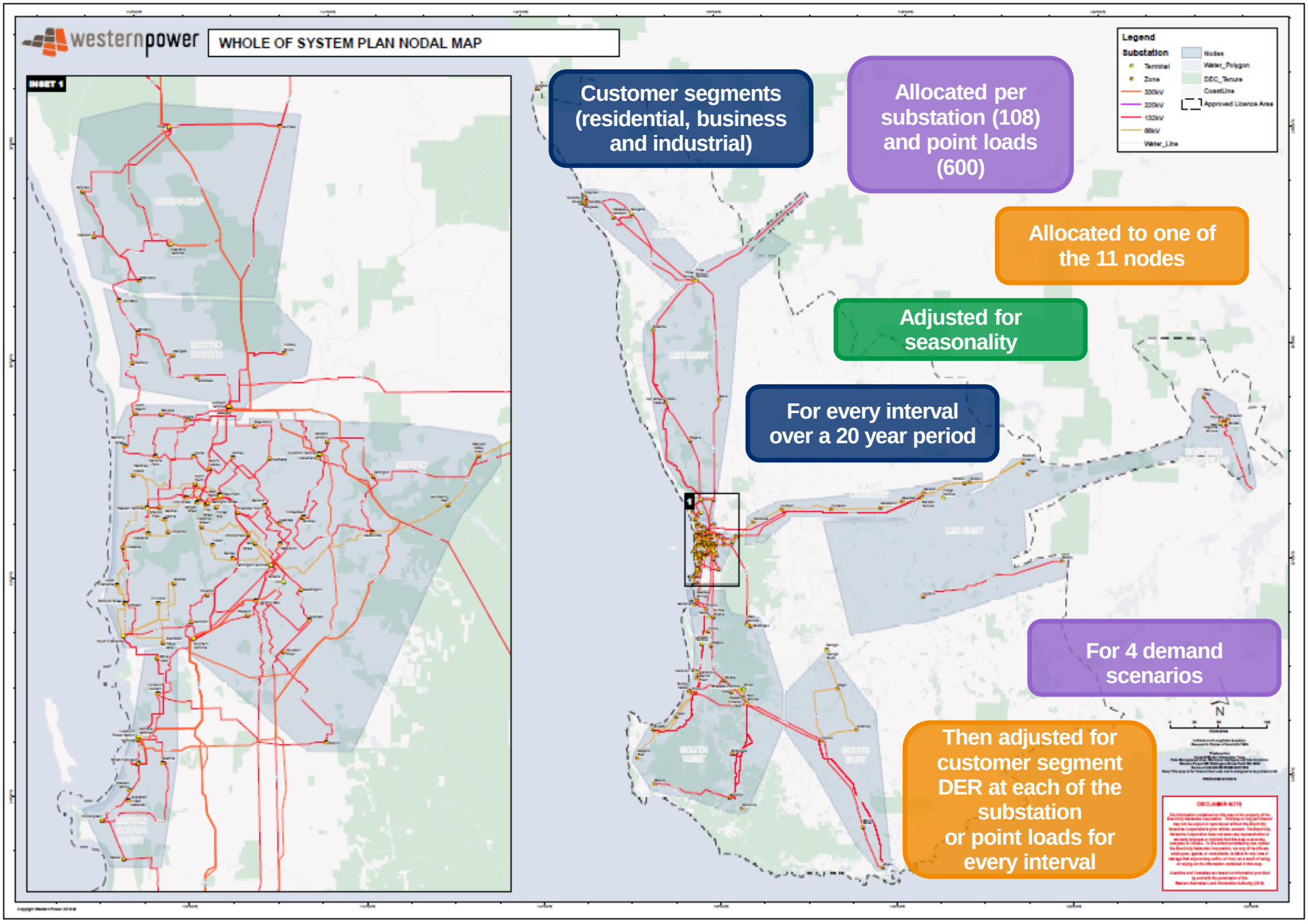
Energy Transformation Implementation Unit

Agenda Item 6(b)

Whole of System Plan

Modelling Methodology, Inputs and Assumptions

15 October 2019

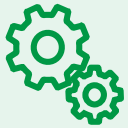

westernpower
WHOLE OF SYSTEM PLAN NODAL MAP
INSET 1
Customer segments (residential, business and industrial)
Allocated per substation (108) and point loads (600)
Allocated to one of the 11 nodes
Adjusted for seasonality
For every interval over a 20 year period
For 4 demand scenarios
Then adjusted for customer segment DER at each of the substation or point loads for every interval
Legend
Substation
Terminal
Zone
330kV
220kV
132kV
66kV
Water_Line
Nodes
Water_Polygon
DEC_Tenure
CoastLine
Approved Licence Area
N

Inputs and assumptions

Customer demand
Scenarios have been broken down into half-hourly demand profiles on a customer segment basis in each of the 11 nodes over 20 years

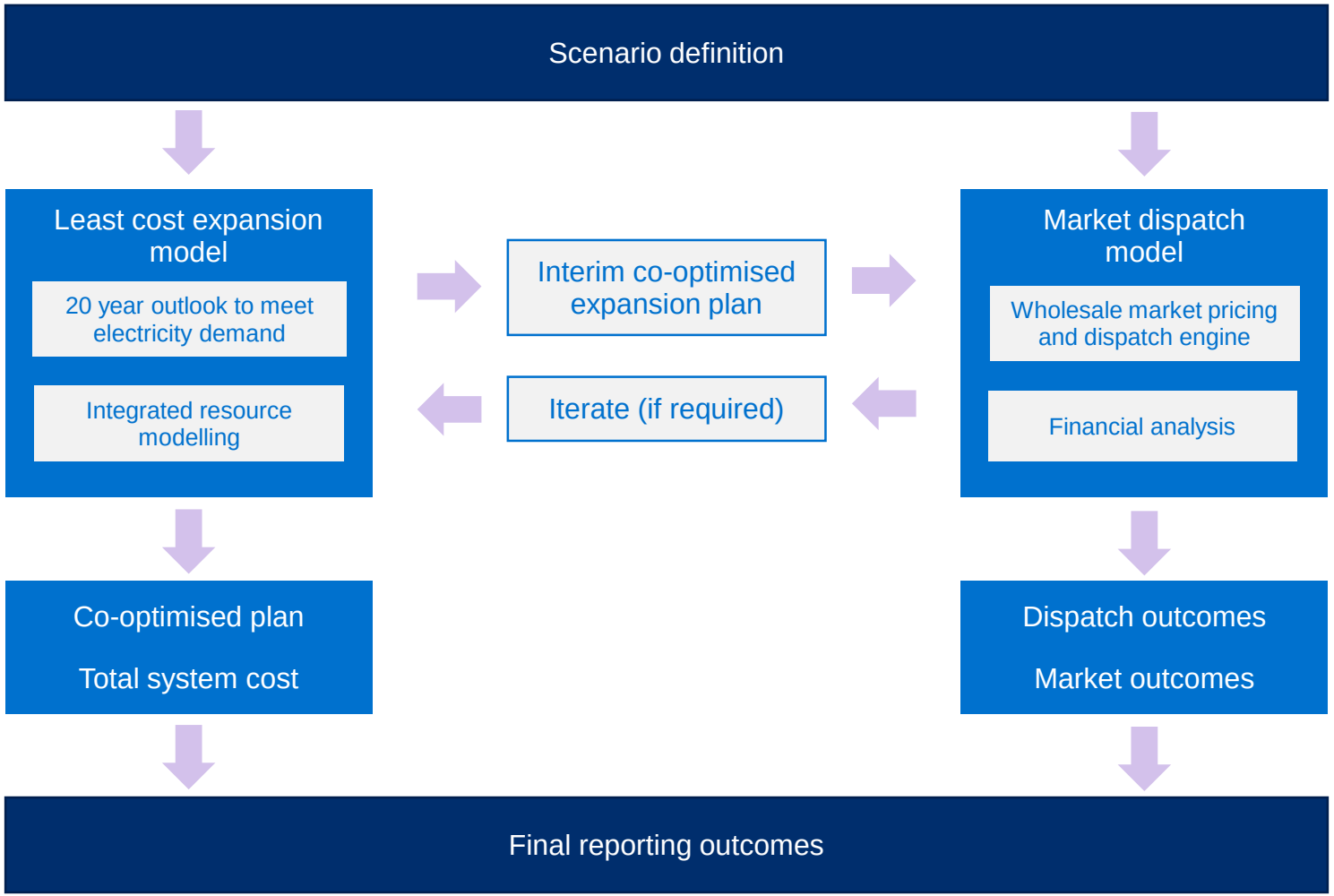
Network augmentation
Western Power are estimating network transfer limits between the nodes and providing approximate costs for network augmentation options

Generator costs
Cost assumptions of both existing and potential new facilities have been collated in collaboration with a wide range of industry participants



Essential system services
System constraints are assessed in the modelling and examine frequency regulation (load following) and frequency contingency reserves (spinning reserve and load rejection reserve)

Modelling overview



Stakeholder engagement

The Project Team has tested the modelling inputs and assumptions with a wide range of industry stakeholders

50+ 1:1 meetings with interested stakeholders since project start

20+ 1:1 meetings with interested stakeholders re inputs and assumptions

Industry participants

synergy
alintaenergy
CHANGEENERGY
erm POWER
TransAlta
Sumitomo Corporation
NEWMONT
SOUTH32
perthenergy
ATCO AUSTRALIA
westgen
Infrastructure Capital
WATER CORPORATION
SIMCOA OPERATIONS
SkyFarming

Investors

CEFC CLEAN ENERGY FINANCE CORP
SMBC
CommonwealthBank
Westpac

Advocacy Groups

CLEAN ENERGY COUNCIL
CME
Sustainable Energy NOW

* Please note data is as at 14 October 2019

Next steps

Update Energy Transformation Taskforce on modelling methodology, inputs and assumptions

18 October 2019

Publish high-level modelling methodology, inputs and assumptions information paper

October/November 2019

Conduct least cost expansion modelling

October 2019 – January 2020

Provide modelling update to the Market Advisory Committee

Early 2020

Thank you

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