SWIS Renewable Energy Target (RET) Dashboard -

Tracking Progress Towards 100% Renewable Energy

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Presentation contains indicative data for illustrative purposes only

Background and Purpose

Why a Renewable Energy Target (RET) for the WA SWIS?

- WA needs to do our share in meeting the national RE target
- Multiple benefits including: jobs, lower energy prices, energy security, regional development and climate action
- 74% of people in WA support a RET
- **Solutions for Climate WA is advocating -** Representing 17 environmental movement organisations including SEN

RET Progress needs to be transparently and independently monitored

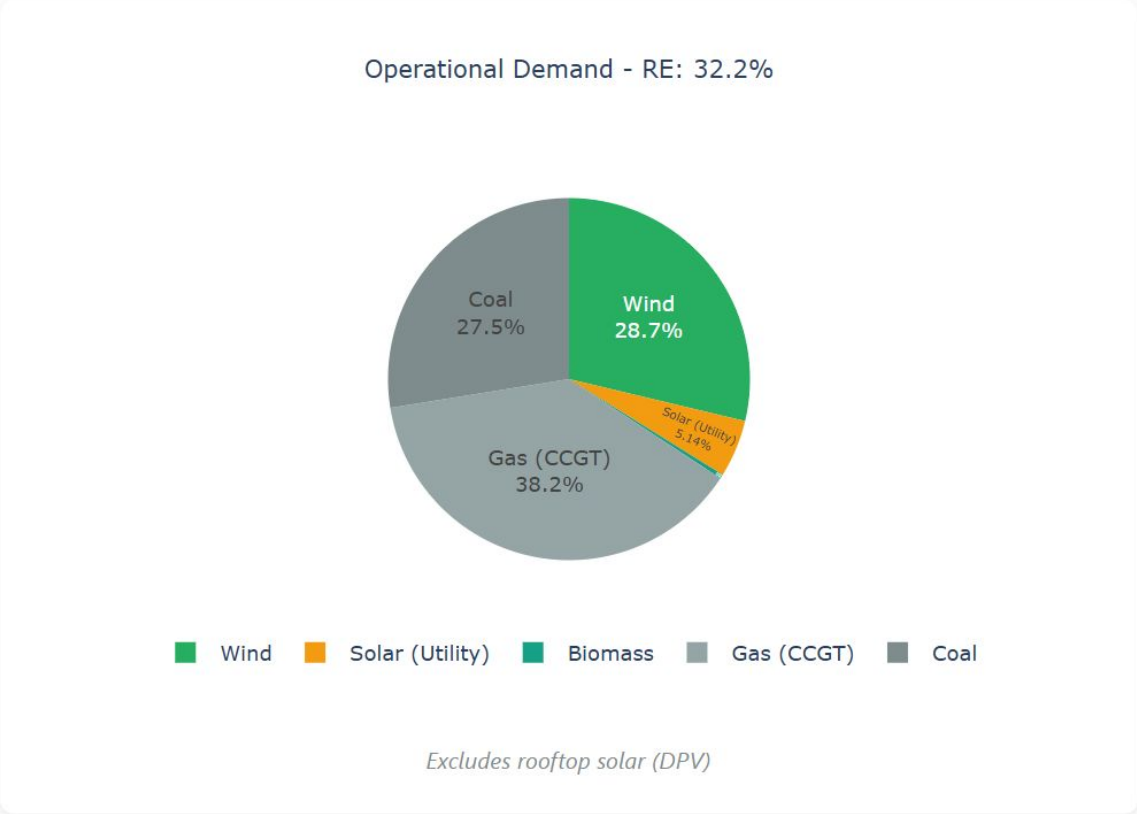
- How will we know we are on track?
- Where will our current trajectory land us?

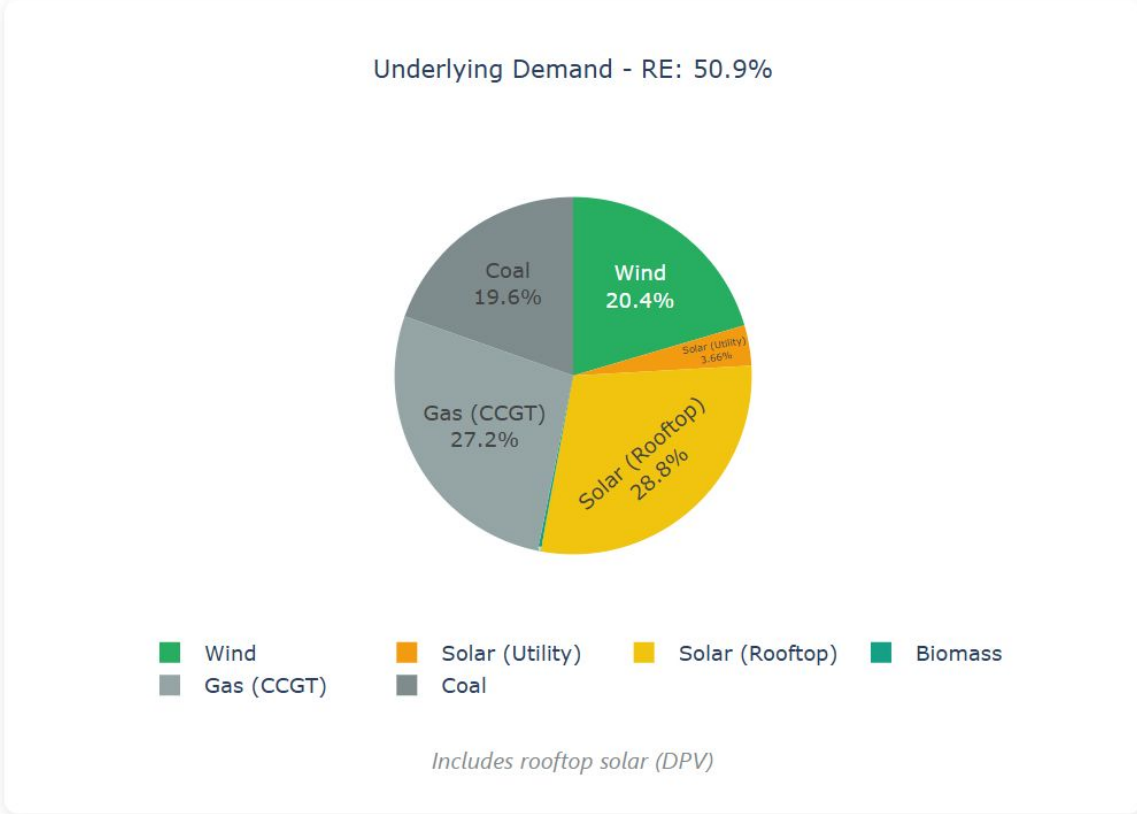
SEN proposes to provide RET modelling and progress tracking via Siren Web and the SEN website

- Tracks SWIS decarbonisation progress to 2040 with interim targets
- AEMO SCADA facilities data and Clean Energy Regulator emissions data
- Regular public reporting with analysis via SEN website and Social Media
- Future Scenario Projections based on simulated generation using the NREL System Advisor Model (SAM)

RET Definition and Methodology

- RE% = (Renewable Energy Generation / Total Generation) × 100
- Monthly, Quarterly, Year to Date, and Annually
- Renewable energy: wind, solar (utility and DPV), hydro, hybrid, biomass and Energy Storage System (BESS etc)
- Tracks both operational demand and underlying demand
- Reports RET progress, RE generation pipeline, emissions and wholesale prices





Setting and tracking Targets

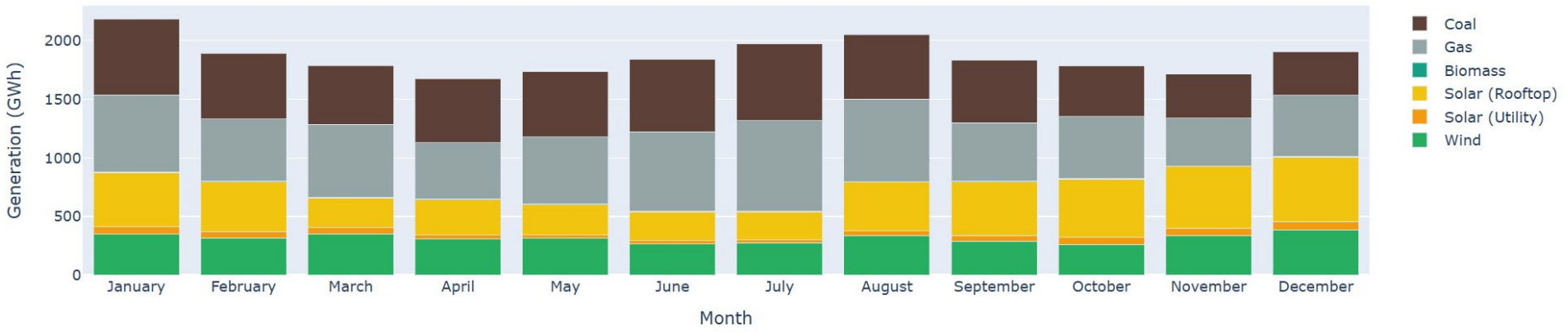
Major and Interim Targets for RE%:

2030 – **82%** → 2035 – **92%** → 2040 – **100%**

A growing RE% must account for the increasing demand from household and industrial electrification, decarbonisation of transport, data centres and other industrial uses, etc

Year	**RE Target %**	**Emissions** tCO2e
2025	38%	12,100,00
2030	82%	5,100,000
2035	92%	3,300,00
2040	100%	-

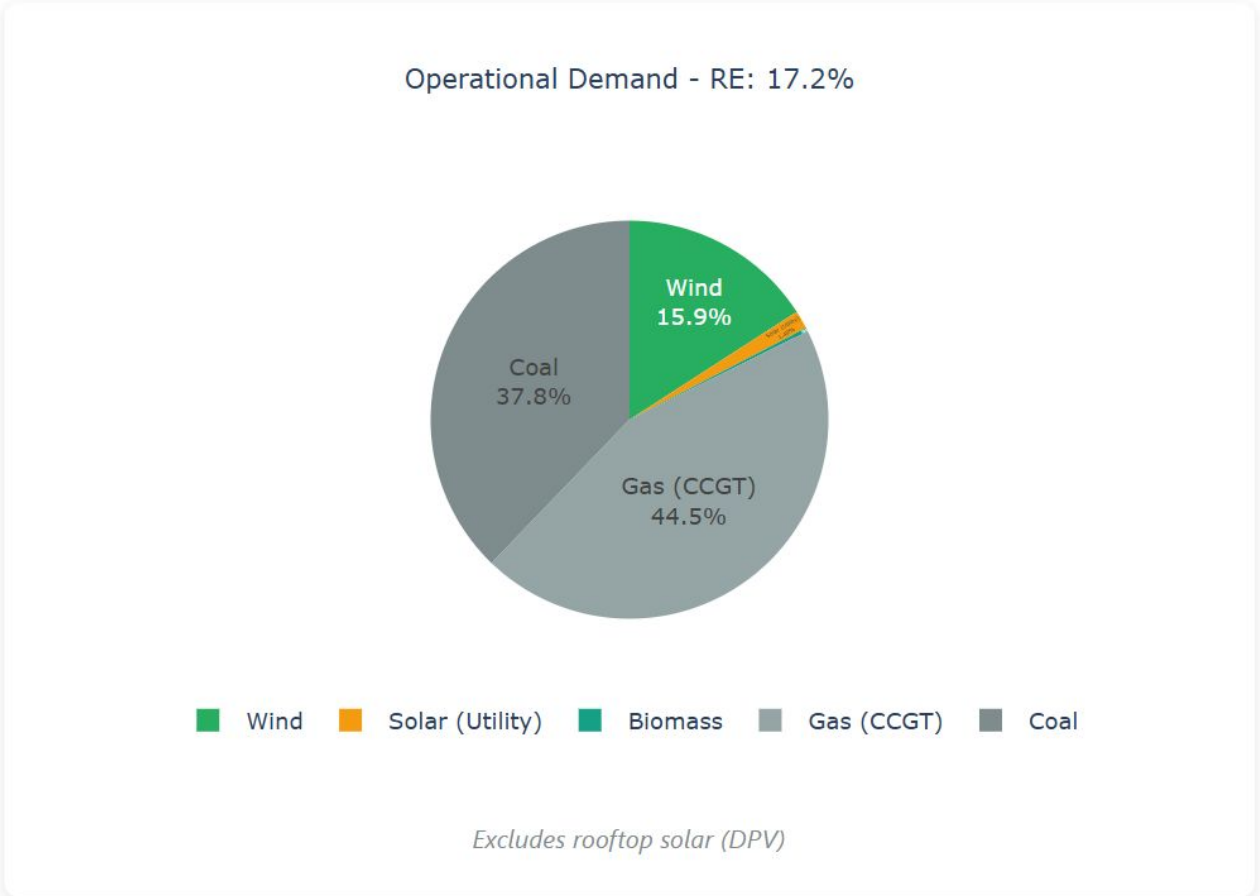
Monthly Generation by Technology (Storage excluded)

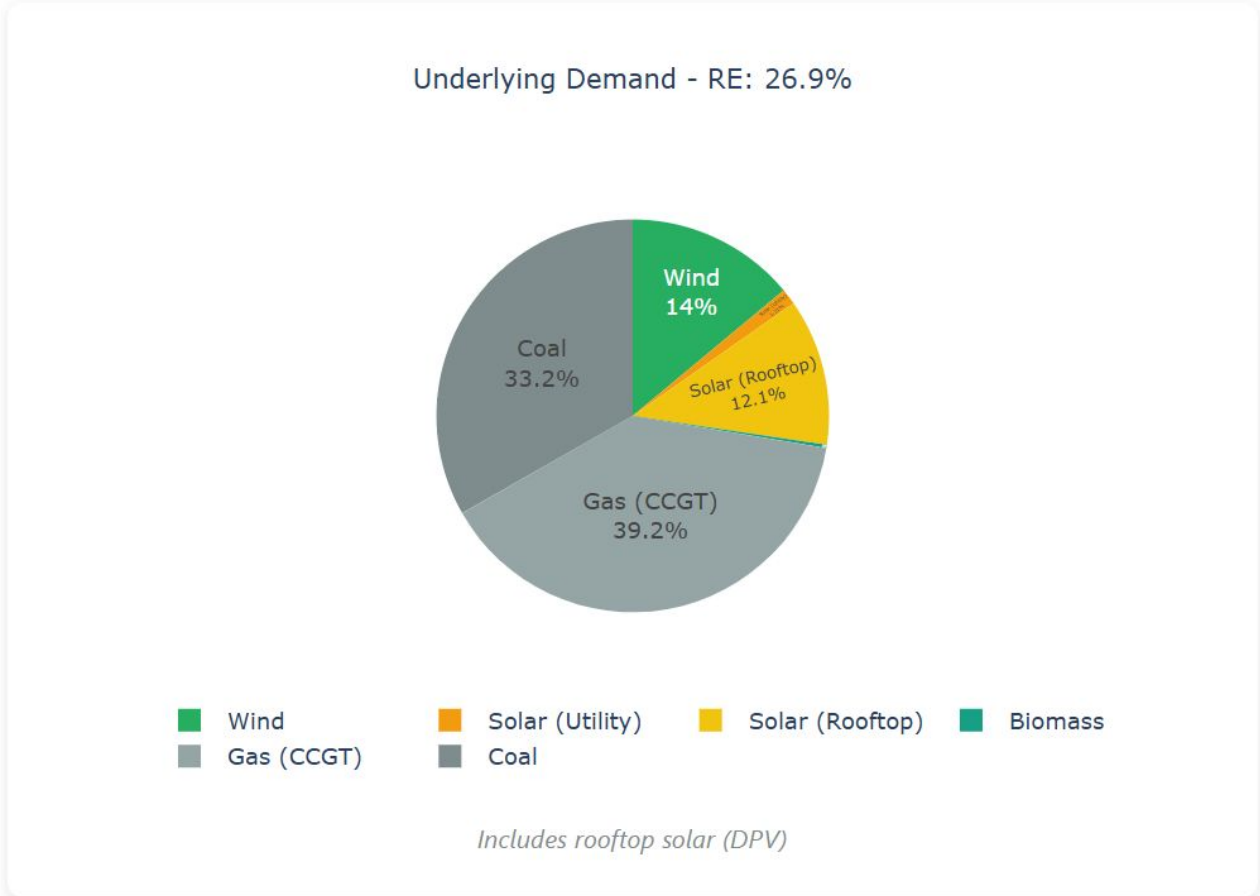


Multi-Year RE% Trends (Operational)

The Monthly Dashboard

- Shows last month's RET statistics.
- Can be printed but otherwise not published and past reports are not archived.





Estimating Consumption

Using the three scenarios based on AEMO Electricity Statement of Opportunity (ESOO):

- Delayed Change: Lower electrification, slower EV adoption (Planned RE generation facilities)
- Step Change: Medium growth aligned with current policy (Planned + Probable facilities)
- Accelerated Change: Accelerated uptake (Planned + Probable + Speculative)

Modelling methodology:

- Define Consumption Factor Types – e.g. home electrification, EV charging, industrial electrification
- Rooftop Solar (Consumption Offset)
- Calculate future consumption for a given year as the sum of Consumption Factors with growth rates applied

Demand Factor Types

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Create New Factor Type | View Factor Instances

Search factor types... Search

Order	Name	Category	Description	Instances	Actions
0	EV Charging	Both	Light electric vehicle domestic transport charging.	5	Edit
1	Home electification	Both	Replacement of gas appliances with electic	3	Edit
2	Industrial electrification	Both	Grid connected industrial loads converted to electric	3	Edit
3	Hydrogen Production	Operational	Electrolysis for green hydrogen production	1	Edit
4	Data Centers	Operational	Data center and computing infrastructure demand growth	3	Edit
5	HVAC Electrification	Both	Heat pumps and electric HVAC replacing gas heating	2	Edit
6	Rooftop Solar	Underlying	Distributed rooftop solar PV generation (demand offset)	3	Edit
7	Residential Baseload	Both	Basic residential demand growth (population, appliances)	1	Edit
8	Commercial Baseload	Operational	Commercial sector baseload demand growth	2	Edit

About Factor Types

- **Operational**: Electricity supplied from the grid to customers (e.g. industrial loads, data centers)
- **Underlying**: Total consumption including behind-the-meter self generation (e.g. rooftop dpv)
- **Both**: Applies to both demand types (e.g., EV charging, residential)

Scenario Demand Factors

Demand Factor Instances

Configure growth parameters for each demand factor in different scenarios.

Create New Factor | Manage Factor Types

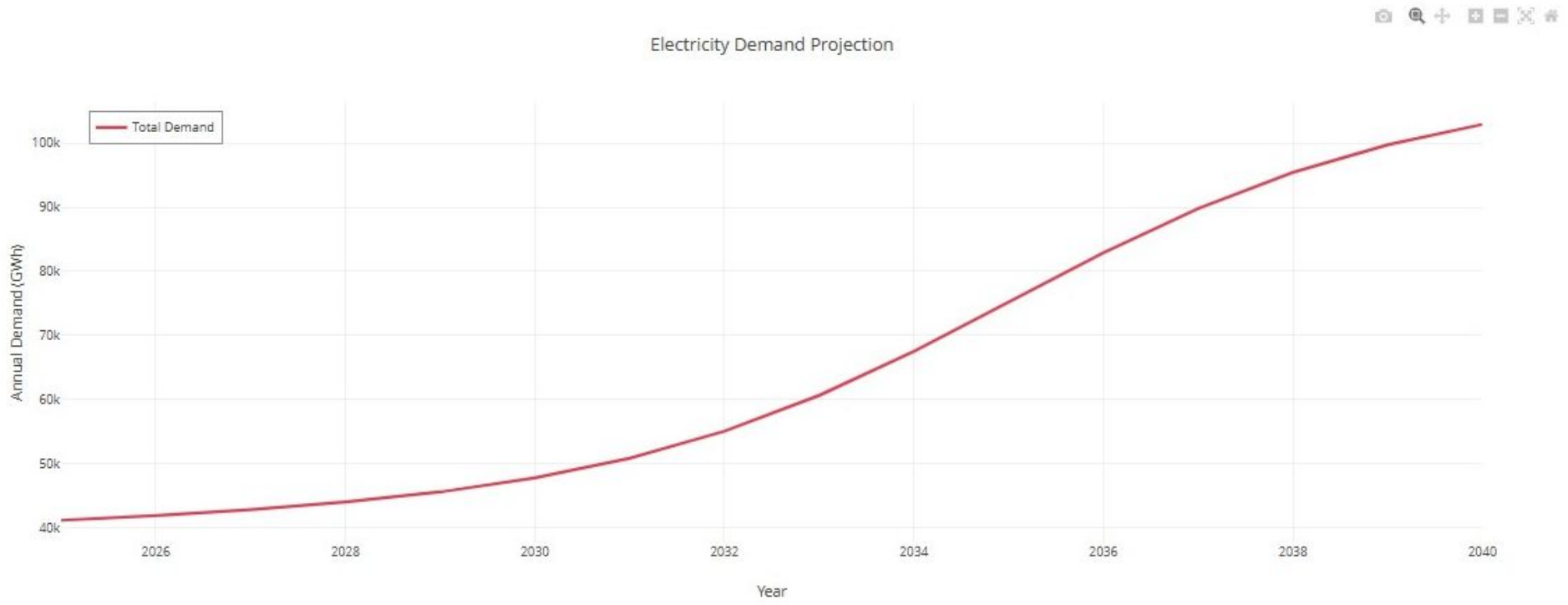
Scenario: Slower Growth | Factor Type: All Types | Status: Active Only

Factor Type	Scenario	Operational %	Underlying %	Growth Rate	Growth Type	Status	Actions
EV Charging	Slower Growth	10.0%	20.0%	0.020	S-Curve (Logistic)	Active	Edit Toggle Off Delete
Home electrification	Slower Growth	20.0%	25.0%	0.020	Linear Growth	Active	Edit Toggle Off Delete
Industrial electrification	Slower Growth	20.0%	10.0%	0.020	Linear Growth	Active	Edit Toggle Off Delete
Data Centers	Slower Growth	30.0%	10.0%	0.020	Linear Growth	Active	Edit Toggle Off Delete
HVAC Electrification	Slower Growth	20.0%	15.0%	0.010	Linear Growth	Active	Edit Toggle Off Delete
Rooftop Solar	Slower Growth	-	20.0%	0.020	S-Curve (Logistic)	Active	Edit Toggle Off Delete

Legend

- Time-varying growth rates configured
- **Operational %**: Percentage of grid operational demand in base year
- **Underlying %**: Percentage of total consumption (incl. distributed gen)
- Inactive factors are shown with gray background

Demand Projection Results



Projection Summary

Base Year Demand	End Year Demand	Total Growth	Avg. Annual Growth
41168	102915	150.0%	6.30%
GWh/year	GWh/year	% increase	% per year

Configuration Used:

Factor-Based Projection

Creating Scenarios - WA SWIS

- Scenarios comprise RE facilities existing, planned, probable and possible.

Scenario Target Projections

- Estimates Consumption, Generation and fuel type based on modelled RE facilities
- Estimates probability of new RE facilities being commissioned based on Monte Carlo simulations

Step Change Scenario (Base Case)

Year	RE%	Wind (GWh)	Solar (GWh)	DPV (GWh)	Storage (MWh)	Emissions (kt)	Target Type
2025	45.2%	4,850	2,120	3,400	850	5,420	Ordinary
2026	48.5%	5,320	2,580	3,650	1,200	5,180	Ordinary
2027	52.1%	5,890	3,150	3,920	1,650	4,850	Ordinary
2028	56.8%	6,580	3,820	4,180	2,200	4,420	Ordinary
2030	**65.2%**	7,850	5,120	4,650	3,500	3,650	Interim Target
2032	71.5%	8,920	6,480	5,100	4,800	3,020	Ordinary
2035	78.3%	10,250	8,150	5,680	6,500	2,350	Ordinary
2040	**86.7%**	12,450	10,820	6,520	9,200	1,480	Major Target

Questions?

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