pGrid Reports – A Guide

Purpose

The purpose of this document is to allow users of pGrid to navigate the various reports in the application. Use the CTRL + click to use the underlined report title to hyperlink to the report, you will need your username and password for the first report viewed.

Major Reports

There are four major reports in pGrid as below

A) Whole System - Demand Sectors and Networks	Demand data in TWh, including exports and losses
B) Whole System - Energy Costs	The costs of the whole energy system in Operational costs (OPEX) and capital cost (CAPEX) terms
C) Whole System - Emissions	The emissions in CCC format in MTCO2e
D) Whole System - Resilience - Plant Margin	Resilience in plant margin terms

The Sections

There are six sections of pGrid

Section	Description
I Energy Consumers	Consumers are devices such as toasters, air source heat pumps, and electric vehicle
II Energy Producers	Producers are generating assets such as wind turbines and storage assets like batteries
III System Operations	The resilience information, plant margins etc.
IV Prices	Power, fuel, storage and capture prices
V Sustainability	Carbon emissions
VI Tranzparent Admin	List of reports available and details of current report being viewed

Each section may have sub sections e.g. 1.1 Energy Consumer – Overview

I Consumers

I Energy Consumers/1.1 Energy Consumers – Overview

Hyper link to Report	Report Description	Inputs to pGrid
a) Sector Demand Networks and Losses	A review of all demand data and the demand references used. Where a sector profile is used to create demand then the peak sector load is shown and the load factor for the sector. Sector notes in the report explain in summary how the demand is calculated.	Sector demand inputs and sector demand references Aviation and shipping are annual inputs in TWh taken from the reference used. A demand of 106 TWh is needed to supply 100 TWh to consumers with a losses rate of 6%. Losses rates are input in the run Configuration
b) V100_Duration Curve	The load duration curve in Tranches. Tranche Load is the Consumer demand plus exports and after the electrolyser load is added	

I Energy Consumers/1.2 Energy Consumers – Details

Hyper link to Report	Report Description	Inputs to pGrid
a) Sectors – Electricity Network – on a day	The Consumer View demand is constructed from the individual Sectors on a given day and month	
b) Demand Shape	The shape of demand as a table of statistics by month and day in half hours. Report shows the Tranche Load level in each period.	
c) Exports and Electrolysis on a day	The calculated results for exports and electrolysis shown by day and month in half hours	Exports are calculated using the annual reference and a profile, different profiles can be used e.g. • A profile to reflect the renewable generation • Baseload (flat profile) • Consumer view profile (to reflect when exports are needed by recipient)

I Energy Consumers/1.2 Energy Consumers - Details/Profiles

Hyper link to Report	Report Description	Inputs to pGrid
a) Appliance Profiles	A profile by half hour of any Thing used in the Village 100 demand forecast. Select Network, thing code, business day and month of profile. Thing codes can be reviewed here - b) Things	Profiles are inputs in the majority of cases. Some profiles are generated by pGrid for example the Consumer profile used in exports.
b) Sector Profiles	The final sector profiles used in the demand forecast can be viewed by day and month. Sector profiles have a default peak of 1 kW.	Sector profiles are inputs. Can be created from meter profiles if available (e.g. Elexon MPAN profiles)

Hyper link to Report	Report Description	Inputs to pGrid
b) Meter profiles	The meter-based profiles used as sector overrides, where the sector profile is used to override any Village 100 created profile demand	These profiles can be used to create Sector Profiles

I Energy Consumers/1.4 Sectors/1.4 Village 100

I Energy Consumers/1.4 Village 100/1.4.1 Your Village

Hyper link to Report	Report Description	Inputs to pGrid
a) Villagers	A list of 100 villagers by name	Inputs needed to create the village, like address and EV usage
b) Things	A list of the possible things that consume energy	Things are inputs
c) Village Places	A list of the buildings in the village with the heat source used	Places are inputs and the heat source used and heat load . HSSC is Heating Supply Short Code
d) Electric Vehicles	The electric vehicles that can be used by villagers	EV's are inputs and are assigned to each villager or not
e) Electric Vehicles Chargers	The electric chargers that can be used in MPH (Miles of travel Per Hour of charge)	EV chargers are inputs and also input as a Thing with a profile

I Energy Consumers/1.4 Village 100/1.4.2 Services

Hyper link to Report	Report Description	Inputs to pGrid
a) Services for a Villager - Individual	The services any individual user has allocated to them, kWh per annum and peak kW	
b) All Services for all Villagers	The services for all villagers, kWh per annum and peak kW	
c) Place - Energy Use	The types of places (buildings) their address and heating type and heat load	

I Energy Consumers/1.4 Village 100/1.4.3 Services

Hyper link to Report	Report Description	Inputs to pGrid
a) Village Energy MWh - A Year	The village energy demand by sector in MWh (with the override calculated)	
b) Village Load MW - A day	The village energy load by sector in MW	

II Energy Producers

II Energy Producers/2.1 Energy Producers - Overview

Hyper link to Report	Report Description	Inputs to pGrid
a) Capacity available in Merit Order	An overview of each major generation type, capacity, running hours, LCoE, bid prices and Load factors	
b) Capacity References - Annual	Generation output compared to the reference for the study	The Annual Output by generation type is an input
c) Gensets Aggregation	pGrid will aggregate the list of generation assets added as inputs and aggregate them in line with the selected Genset Aggregation threshold see pGrid Study Summary.	

II Energy Producers/2.1 Energy Producers - Overview/2.1.2 Hydrogen

Hyper link to Report	Report Description	Inputs to pGrid
a) Hydrogen Producers	Capacity and efficiency of hydrogen producers	Hydrogen producers are input here

II Energy Producers/2.1 Energy Producers - Overview/2.1.3 Storage Assets

Hyper link to Report	Report Description	Inputs to pGrid
a) Storage Assets Summary	A summary of the storage assets by network with the running hours and number of calls for deliver or charge	Storage assets, capacity in MW and MWh stored are inputs

II Energy Producers/2.2 Energy Producers – Details

Availability

Availability assumptions are by month for any generation classification. A new classification can be added if needed. Availability adjusts the installed capacity to the capacity available at any time to meet demand, it deals with technical availability in thermal generation assets to wind availability etc.

Once a generating asset is available in any moment it only runs if it is economically cheap economically cheap enough to be called (this is called despatch)

Hyper link to Report	Report Description	Inputs to pGrid
a) a) Availability - Monthly - Major Generator	The availability inputs cab be reviewed for the major generation types	Availability data for each classification based on Availability Type is a monthly input
b) Availability – by Generation Type	The availability inputs can be reviewed for a specific generation type	

Historical

Where detailed reference data is input, this can be compared to pGrid outputs

Hyper link to Report	Report Description	Inputs to pGrid
a) Capacity Outturn -Side by side	Generation output by tranche compared side by side with the reference	
b) Capacity Outturn -Delta	The difference between the pGrid output and reference for all generation	
c) delta Capacity Outturn -Delta - by GSC	The difference between the pGrid output and reference for all generation by generation classification	

Generation

Hyper link to Report	Report Description	Inputs to pGrid
a) Genset Inputs	The raw list of generation assets can be reviewed. In some cases, this can be many hundreds of assets.	Generation data is input here, genset name, capacity and classification.
b) Embedded Gensets	pGrid will aggregate the list of genset inputs according to the threshold set from a choice of 10,000 GW or 1000 GW	The aggregation level is a user choice changed by the Resolution function
c) Genset Operations	A summary for each generation type of running hours, cost, bid prices and profits	

II Energy Producers/2.2 Energy Producers - Details/2.2.2 Hydrogen - Details

Hyper link to Report	Report Description	Inputs to pGrid
a) Hydrogen Production - Year	The hydrogen output by day in the gas year	

II Energy Producers/2.2 Energy Producers - Details/2.2.3 Storage Asset - Details

Hyper link to Report	Report Description	Inputs to pGrid
a) Elec Storage Asset Operations - A Day	The charge and discharge behaviour of storage asset on a day in a month	

II Energy Producers/2.3 Energy Producers Profits

Hyper link to Report	Report Description	Inputs to pGrid
a) Genset Bid Strategies	When pGrid despatches generation the bid price is increased or decreased by the bid strategy set by the generator owner	Bid Strategies are an input
b) Generation Profits Summary	A summary of the profits of and aggregated generator type	
c) Genset Profits		
d) Retirements	http://18.169.126.12/Reports/report/II Energy Producers/2.3 Energy Producers Profits/2.3.1 Generation/d) Retirements	

II Energy Producers/2.4 Energy Producer - Classification

Hyper link to Report	Report Description	Inputs to pGrid
a) GSC Overview - Genset Characterisation	A report reviewing the different generation classifications by generation type	
b) Primary Fuel GSC	A list of the primary fuel types used by pGrid	
c) Technology Availability GSC	A list of the different availability types used by pGrid. Lists of generation are often sorted by this classification	
d) Thermal Plant Efficiency GSC	The thermal efficiencies used by pGrid	Thermal efficiency is a pGrid input
e) Thermal Plant Carbon Emissions GSC	The emissions classification used by pGrid	Emissions are calculated from kgCO2e/kWh which is an input
f) Genset Costs GSC	The fixed and variable costs used by pGrid to calculate profits	Fixed and variable costs are an input

III Energy System Operations

III Energy System Operations/3.1 System Overview

Hyper link to Report	Report Description	Inputs to pGrid
a) Generation Stack and Load Duration	A summary chart of the output of generation and the demand tranche load. The 'Simpler' chart.	
b) Tranche Results	The despatch results that produce the 'Simpler Chart'	The number of tranches presented to users is a choice made by the user using the Resolution function. This choice is 1/10/100 tranches
c) Gas Days - Year	The gas system by day of the year	

III Energy System Operations/3.2 System Details

Hyper link to Report	Report Description	Inputs to pGrid
a) A Tranche Stack in Detail	The details of how pGrid despatched the generation for a given Tranche	
b) Gas Year Detail	A table showing the details of the operation of the gas system by day	

III Energy System Operations/3.3 Energy Storage

Hyper link to Report	Report Description	Inputs to pGrid
a) ESO Actions	The actions taken by the ESO for any tranche	

IV System Prices

IV System Prices/4.1 Price Overview

Hyper link to Report	Report Description	Inputs to pGrid
a) Year	The baseload price for the year calculated by pGrid	
b) Grid Power Price Duration	http://18.169.126.12/Reports/report/IV System Prices/4.1 Price	

IV System Prices/4.2 Prices - Details

Hyper link to Report	Report Description	Inputs to pGrid
a) Month	Power prices calculated by pGrid by month, compared to the reference chosen	
b) Grid Power Prices by Day	Power prices on a day in a month by half hour, compared to the reference chosen	
c) Capture Prices	The capture prices of any generation type is the revenue earned by the generator type in per MWh generated.	

IV System Prices/4.2 Prices - Details/4.2.2 Primary Fuel Prices

Hyper link to Report	Report Description	Inputs to pGrid
a) Primary Fuel Prices	Prices for primary fuels by month	Primary fuel prices by month are an input to pGrid

V Sustainability

Hyper link to Report	Report Description	Inputs to pGrid
a) Carbon Emissions	Carbon emissions calculated by generation type	

All Reports

All the SSRS reports are listed below

NAME	URL
A) Whole System - Demand Sectors and Networks	http://18.135.5.193/Reports/report/A) Whole System - Demand Sectors and Networks
B) Whole System - Energy Costs	http://18.169.126.12/Reports/report/B) Whole System - Energy Costs
C) Whole System - Emissions	http://18.169.126.12/Reports/report/C) Whole System - Emissions
D) Whole System - Resilience - Plant Margin	http://18.169.126.12/Reports/report/D) Whole System - Resilience - Plant Margin
a) Sector Demand Networks and Losses	http://18.169.126.12/Reports/report/I Energy Consumers/1.1 Energy Consumers - Overview/a) Sector Demand Networks and Losses
b) V100 Duration Curve	http://18.169.126.12/Reports/report/I Energy Consumers/1.1 Energy Consumers - Overview/b) V100 Duration Curve
a) Demand by Half Hour in any Day -Matrix	http://18.169.126.12/Reports/report/I Energy Consumers/1.2 Energy Consumers - Details/a) Demand by Half Hour in any Day - Matrix
b) Demand Shape	9
a) Appliance Profiles	http://18.169.126.12/Reports/report/I Energy Consumers/1.2 Energy Consumers - Details/Profiles/a) Appliance Profiles
b) Sector Profiles	http://18.169.126.12/Reports/report/I Energy Consumers/1.2 Energy Consumers - Details/Profiles/b) Sector Profiles
b) Sector override profiles	http://18.169.126.12/Reports/report/I Energy Consumers/1.2 Energy Consumers - Details/Profiles/b) Sector override profiles
a) Sectors - A Day	http://18.169.126.12/Reports/report/I Energy Consumers/1.3 Sectors/1.3.1 Electricity Networks/a) Sectors - A Day
b) Village Demand - on a day	http://18.169.126.12/Reports/report/I Energy Consumers/1.3 Sectors/1.3.1 Electricity Networks/b) Village Demand - on a day
c) Exports and electrolysis - on a day	http://18.169.126.12/Reports/report/I Energy Consumers/1.3 Sectors/1.3.1 Electricity Networks/c) Exports and electrolysis - on a day
a) Sectors - Grid Demand Gas -on a day	http://18.169.126.12/Reports/report/I Energy Consumers/1.3 Sectors/1.3.2 Gas Networks/a) Sectors - Grid Demand Gas -on a day
a) Villagers	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.1 Your Village/a) Villagers
b) Things	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.1 Your Village/b) Things
c) Village Places	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.1 Your Village/c) Village Places
d) Electric Vehicles	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.1 Your Village/d) Electric Vehicles
e) Electric Vehicles Chargers	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.1 Your Village/e) Electric Vehicles Chargers
a) Services for a Villager - Individual	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.2 Services/a) Services for a Villager - Individual
b) All Services for all Villagers	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.2 Services/b) All Services for all Villagers
c) Place - Energy Use	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.2 Services/c) Place - Energy Use
a) Village Energy MWh - A Year	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.3 Village Demand/a) Village Energy MWh - A Year

b) Village Load MW - A day	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.3 Village Demand/b) Village Load MW - A day
c) Village Domestic Load MW - A day	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.3 Village Demand/c) Village Domestic Load MW - A day
d) Village Transport Load MW - A day	http://18.169.126.12/Reports/report/I Energy Consumers/1.4 Village 100/1.4.3 Village Demand/d) Village Transport Load MW - A day
a) Capacity available in Merit Order	http://18.169.126.12/Reports/report/II Energy Producers/2.1 Energy Producers - Overview/2.1.1 Generation/a) Capacity available in Merit Order
b) Capacity References - Annual	http://18.169.126.12/Reports/report/II Energy Producers/2.1 Energy Producers - Overview/2.1.1 Generation/b) Capacity References - Annual
c) Gensets Aggregation	http://18.169.126.12/Reports/report/II Energy Producers/2.1 Energy Producers - Overview/2.1.1 Generation/c) Gensets Aggregation
a) Hydrogen Producers	http://18.169.126.12/Reports/report/II Energy Producers/2.1 Energy Producers - Overview/2.1.2 Hydrogen/a) Hydrogen Producers
a) Storage Assets	http://18.169.126.12/Reports/report/II Energy Producers/2.1 Energy Producers - Overview/2.1.3 Storage Assets/a) Storage Assets
b) Gas Storage Assets Operation - A Year	http://18.169.126.12/Reports/report/II Energy Producers/2.1 Energy Producers - Overview/2.1.3 Storage Assets/b) Gas Storage Assets Operation - A Year
a) Genset Inputs	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/a) Genset Inputs
a) Availability - Monthly - Major Generator	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/Availability/a) Availability - Monthly - Major Generator
b) Load Factors and Capacity	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/Availability/b) Load Factors and Capacity
b) Embedded Gensets	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/b) Embedded Gensets
c) Genset Operations	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/c) Genset Operations
a) Capacity Outturn -Side by side	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/Historical/a) Capacity Outturn -Side by side
b) Capacity Outturn -Delta	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/Historical/b) Capacity Outturn -Delta
c) delta Capacity Outturn -Delta - by GSC	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.1 Generation - Details/Historical/c) delta Capacity Outturn -Delta - by GSC
a) Hydrogen Production - Year	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.2 Hydrogen - Details/a) Hydrogen Production - Year
b) A Gas Day in Detail	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.2 Hydrogen - Details/b) A Gas Day in Detail
a) Storage Asset Tranche Utilisation	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.3 Storage Asset - Details/a) Storage Asset Tranche Utilisation

b) Elec Storage Asset Operations - A Day	http://18.169.126.12/Reports/report/II Energy Producers/2.2 Energy Producers - Details/2.2.3 Storage Asset - Details/b) Elec Storage Asset Operations - A Day
a) Genset Bid Strategies	http://18.169.126.12/Reports/report/II Energy Producers/2.3 Energy Producers Profits/2.3.1 Generation/a) Genset Bid Strategies
b) Generation Profits Summary	http://18.169.126.12/Reports/report/II Energy Producers/2.3 Energy Producers Profits/2.3.1 Generation/b) Generation Profits Summary
c) Genset Profits	http://18.169.126.12/Reports/report/II Energy Producers/2.3 Energy Producers Profits/2.3.1 Generation/c) Genset Profits
d) Retirements	http://18.169.126.12/Reports/report/II Energy Producers/2.3 Energy Producers Profits/2.3.1 Generation/d) Retirements
a) GSC Overview - Genset Characterisation	http://18.169.126.12/Reports/report/II Energy Producers/2.4 Energy Producer - Classification/a) GSC Overview - Genset Characterisation
b) Primary Fuel GSC	http://18.169.126.12/Reports/report/II Energy Producers/2.4 Energy Producer - Classification/b) Primary Fuel GSC
c) Technology Availability GSC	http://18.169.126.12/Reports/report/II Energy Producers/2.4 Energy Producer - Classification/c) Technology Availability GSC
d) Thermal Plant Efficiency GSC	http://18.169.126.12/Reports/report/II Energy Producers/2.4 Energy Producer - Classification/d) Thermal Plant Efficiency GSC
e) Thermal Plant Carbon Emissions GSC	http://18.169.126.12/Reports/report/II Energy Producers/2.4 Energy Producer - Classification/e) Thermal Plant Carbon Emissions GSC
f) Genset Costs GSC	http://18.169.126.12/Reports/report/II Energy Producers/2.4 Energy Producer - Classification/f) Genset Costs GSC
a) Generation Stack and Load Duration	http://18.169.126.12/Reports/report/III Energy System Operations/3.1 System Overview/a) Generation Stack and Load Duration
b) Tranche Results	http://18.169.126.12/Reports/report/III Energy System Operations/3.1 System Overview/b) Tranche Results
c) Gas Days - Year	http://18.169.126.12/Reports/report/III Energy System Operations/3.1 System Overview/c) Gas Days - Year
a) A Tranche Stack in Detail	http://18.169.126.12/Reports/report/III Energy System Operations/3.2 System Details/a) A Tranche Stack in Detail
b) Gas Year Detail	http://18.169.126.12/Reports/report/III Energy System Operations/3.2 System Details/b) Gas Year Detail
a) ESO Actions	http://18.169.126.12/Reports/report/III Energy System Operations/3.3 Energy Storage/a) ESO Actions
b) Free Energy - A BD Day	http://18.169.126.12/Reports/report/III Energy System Operations/3.3 Energy Storage/b) Free Energy - A BD Day
a) Year	http://18.169.126.12/Reports/report/IV System Prices/4.1 Price Overview/a) Year
b) Grid Power Price Duration	http://18.169.126.12/Reports/report/IV System Prices/4.1 Price Overview/b) Grid Power Price Duration
a) Month	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/4.2.1 Grid Power Prices/a) Month
b) Grid Power Prices by Tranche	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/4.2.1 Grid Power Prices/b) Grid Power Prices by Tranche
c) Grid Power prices by Tranche - Delta	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/4.2.1 Grid Power Prices/c) Grid Power prices by Tranche - Delta
d) Grid Power Prices by Day	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/4.2.1 Grid Power Prices/d) Grid Power Prices by Day
a) Primary Fuel Prices	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/4.2.2 Primary Fuel Prices/a) Primary Fuel Prices
a) Capture Prices	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/4.2.3 Generator Capture Prices/a) Capture Prices

8.4.1 Storage Value	http://18.169.126.12/Reports/report/IV System Prices/4.2 Prices - Details/d) Storage Prices/8.4.1 Storage Value
a) Carbon Emissions	http://18.169.126.12/Reports/report/V Sustainability/a) Carbon Emissions
6.2 Your Studies - ResultsSummary	http://18.169.126.12/Reports/report/VI Tranzparent Admin/6.2 Your Studies - ResultsSummary
a) pGrid Study	http://18.169.126.12/Reports/report/VI Tranzparent Admin/a) pGrid Study
c) Your Studies - Resolution	http://18.169.126.12/Reports/report/VI Tranzparent Admin/c) Your Studies - Resolution

Document Changes

Changed IP address in links	18.169.126.12	