Demand Assessment (Existing)

SAMPLE (EXISTING SOLAR, DAY-HOUR-DAY_OF_WEEK)

789 COUNTRY ROAD, GREEN VALLEY VIC 3352

NMI: SAMPLE

2024-02-23

This Document presents a Summary of Data that might be useful for making a Purchasing Decision. But it is Not Sufficient by itself and needs to be interpretted by a Solar Industry Professional or Energy Assessor. Prepared by Central Highlands Energy Assessments (E: enquiries@centralhighlandsenergyassessments.com.au W: www.centralhighlandsenergyassessments.com.au)

Report: Demand Assessment (Existing)

How to Understand this Report

Understanding Your Smart Meter Data

This report summarizes data from the Revenue Smart Meter used by your electricity retailer to calculate your bill.

This Smart Meter data shows electricity usage (and if applicable, Solar Export) as it has actually been recorded and does not involve any manipulation of the data to model hypothetical scenarios. As such it can be used as a baseline when considering:

- How Demand would increase or decrease if Appliances change (eg. replace Hot Water Service using an Electric Element with an Electric Heat Pump)
- How Renewable Energy (eg. Solar Power & a Battery) and Energy Efficiency measures might reduce energy bills and greenhouse gas emissions

Your Revenue Smart Meter Data records Mains Import on multiple meter registers (E1,E2) which should match how they appear on your electricity bill. Your Main/General usage is recorded on Register E1. The Other Register(s) (E2) record usage on Dedicated Circuits typically Electric Hot Water, Slab Heating and/or Climate Saver Air-Conditioners. The runtime of Dedicated Circuits is often restricted by a timer in the Smart Meter (So Dedicated Circuits are often called "Controlled Loads" on your electricity bill).

Solar Power Systems may only be connected to, and so only supply power to, the Main/General Circuits (which appears on your electricity bill as E1). And that might explain why your electricity bill remains higher than expected after installing a Solar Power System. If this is the case, consideration could be given to moving other circuits onto the Main/General tail of the Meter.

Your Revenue Smart Meter records Export of Excess Solar Generation from Your Existing Solar Power System on a Single Meter Register which appears on your electricity bill as: B1.

Understanding Energy [kWh] and Power [kW]

This report refers to Energy measured in KiloWatt Hours (or "kWh"). This is the same unit of measure used on electricity bills.

A KiloWatt Hour ("kWh") is the amount of Energy converted (consumed or generated) over a Period of 1 Hour at a Rate of 1 KiloWatt ("kW"). This Rate in KiloWatts ("kW") is referred to as "Power". The more Powerful ("kW") a device is, the faster it converts Energy ("kWh").

So a 4.8 kW Electric Element in a hot water service that ran for 2 Hours would consume 4.8 KiloWatts x 2 Hours = 9.6 KiloWatt Hours ("kWh"). And a Solar Power System generating 2.0 kW for 4 Hours would yield 2 KiloWatts x 4 Hours = 8 KiloWatt Hours ("kWh"). And a fully-charged Battery with a useable capacity of 10.0 KiloWatt Hours ("kWh") could be discharged at a Rate of 4.0 KiloWatts ("kW") for 10.0 KiloWatt Hours ("kWh") / 4.0 KiloWatts = 2.5 Hours.

Information Used to Prepare This Report

Site Information:

- **Street Address:** 789 COUNTRY ROAD, GREEN VALLEY VIC 3352
- **Mains Connection Details:**
  - **NMI:** SAMPLE
  - **Main Meter:** SAMPLE
  - **Main Meter Register:** E1
  - **Number of Phases:** 1

Pre-Existing Solar PV System:

- 1.44 kW of Solar PV Panels
- 2.88 kW of (Total) Solar Inverter AC Output
- 0 kWh Battery Capacity
- 5 kW Export Limit

Data Sources:

- **Data Source:** NEM Format Data from your Revenue Smart Meter
- **Data Series from this Source:** E1,E2,B1
- **Data File Name:** SAMPLE_POWERCOR_VECFORMAT.csv

Data Quality:

A Full Year of Actual Revenue Smart Meter Data is available; No Estimations have been made to fill out a Full Model Year. Actual Solar Yield Data from Existing Solar System is *NOT* available; Solar Yield has been estimated using a Data for Typical Performance at this Location. But Solar Export Data is available from the Revenue Smart Meter and has been used.

Mains Electricity Prices:

- **Electricity Retailer:** Origin
- **Tariff Plan:** Origin Basic
- **Supply Charge [$ per Day]:** $ 1.30
- **Mains Import (General) [$ per kWh]:** $ 0.33
- **Mains Import (Controlled Load) [$ per kWh]:** $ 0.26
- **Solar Export [$ per kWh]:** $ 0.05
- **Retailer Discount [% for Per kWh Portion]:** 0 %

Acceptable Budget & Payback Period:

- **Budget:** $ 15,000
- **Payback Period (Simple):** 10 Years

Existing Demand Scenario

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Existing Demand Scenario

How to Interpret the Following Section ...

Existing Demand

The following section shows your Actual Mains Import on All Meter Registers (E1,E2) and Solar Export (B1) as recorded in "NEM" Data from your Revenue Smart Meter.

Since your site already has an Alternative Source of Electricity (ie. a Solar (and Battery) System), the Total Demand for Electricity, is the Sum of the Demand met by Solar and the Remaining Demand met by Mains Import.

The Total Demand is described as "Demand (Estimated)" because it has been derived by considering the Total Solar Yield (PV) and substracting the the Solar Export (B1) to leave the the Solar Self-Use (PV-B1). The Total Demand "Demand (Estimated)" is then the Sum of the Solar Self-Use (PV-B1) and the Mains Import.

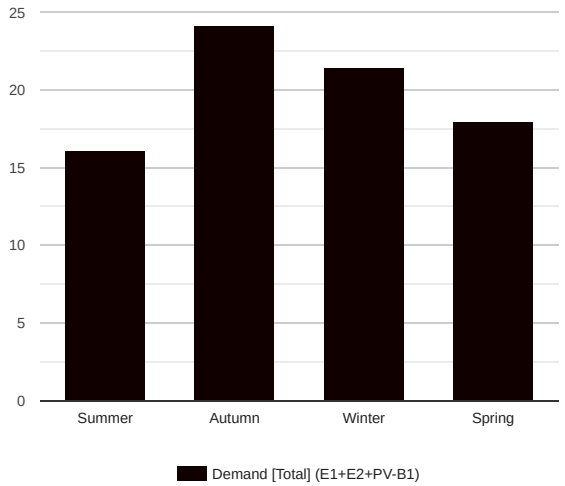
Since No Data recorded by the Actual Solar Power System itself is available, the Solar Yield (PV) has been estimated based on the Panel Capacity (kW) and Angles of Orientation (eg. North) and Angles of Elevation (eg. 20 Degrees) of the Existing Solar Power System.

Note that since Rules & Regulations require that a Solar Power (and Battery) System only be installed on the Main/General Meter Register (E1), only Demand on that Register can be met/reduced using Solar Generation.

Existing Demand Scenario

Demand (Estimated) (on All Meter Registers) [kWh]

Average per Day per Season

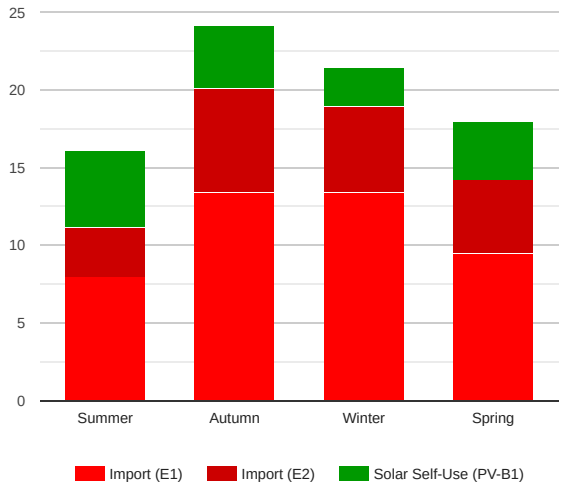


	Demand [Total] (E1+E2+PV-B1)
Summer	16.07
Autumn	24.15
Winter	21.39
Spring	17.97

Existing Demand Scenario

Where Demand (on All Meter Registers) is currently Supplied From [kWh]

Average per Day per Season

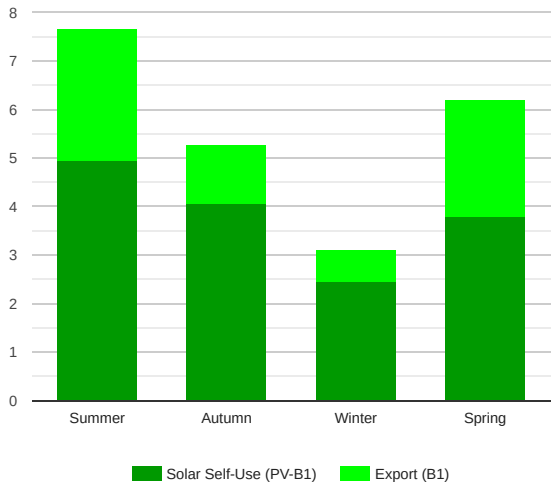


	Import (E1)	Import (E2)	Solar Self-Use (PV-B1)
Summer	7.95	3.18	4.93
Autumn	13.39	6.71	4.05
Winter	13.41	5.54	2.44
Spring	9.45	4.73	3.79

Existing Demand Scenario

Where Solar Yield currently Flows To [kWh]

Average per Day per Season

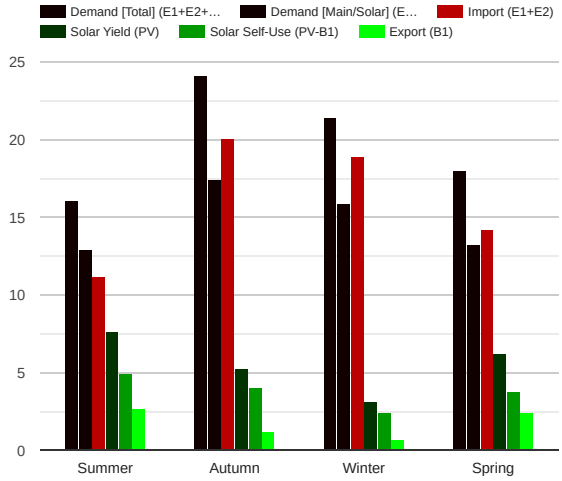


	Solar Self-Use (PV-B1)	Export (B1)
Summer	4.93	2.72
Autumn	4.05	1.22
Winter	2.44	0.67
Spring	3.79	2.41

Existing Demand Scenario

Demand (Estimated Existing), Solar Yield (Estimated Existing), Solar Self-Use, Solar Export & Mains Import (Sum Total on All Meter Registers) [kWh]

Average per Day per Season

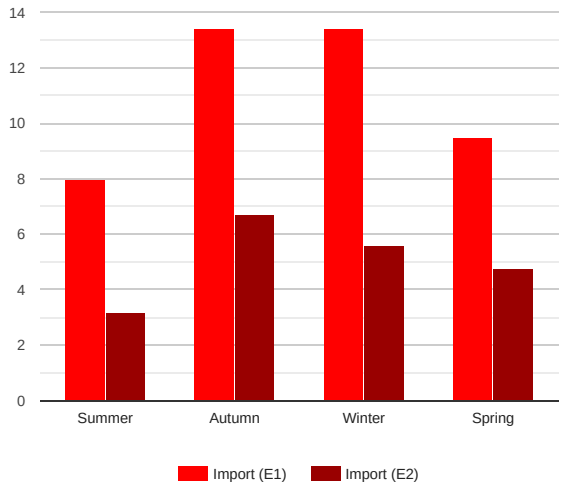


	Summer	Autumn	Winter	Spring
Demand [Total] (E1+E2+PV-B1)	16.07	24.15	21.39	17.97
Demand [Main/Solar] (E1+PV-B1)	12.88	17.44	15.85	13.24
Import (E1+E2)	11.14	20.10	18.95	14.18
Solar Yield (PV)	7.65	5.27	3.11	6.20
Solar Self-Use (PV-B1)	4.93	4.05	2.44	3.79
Export (B1)	2.72	1.22	0.67	2.41

Existing Demand Scenario

Import (per Meter Register (Separate)) [kWh]

Average per Day per Season

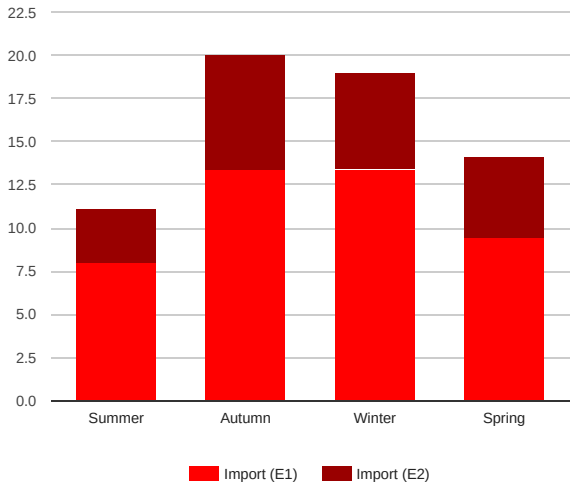


	Import (E1)	Import (E2)
Summer	7.95	3.18
Autumn	13.39	6.71
Winter	13.41	5.54
Spring	9.45	4.73

Existing Demand Scenario

Import (per Meter Register (Stacked)) [kWh]

Average per Day per Season

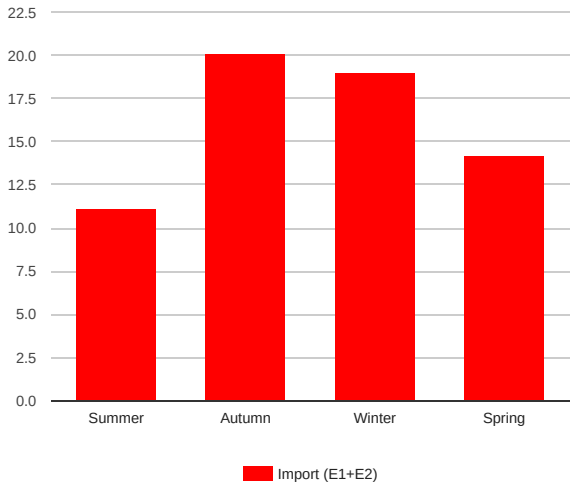


	Import (E1)	Import (E2)
Summer	7.95	3.18
Autumn	13.39	6.71
Winter	13.41	5.54
Spring	9.45	4.73

Existing Demand Scenario

Import (Sum Total of All Meter Registers) [kWh]

Average per Day per Season

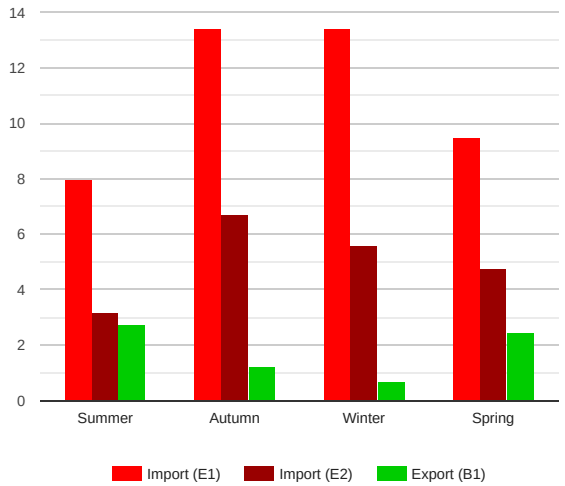


	Import (E1+E2)
Summer	11.14
Autumn	20.10
Winter	18.95
Spring	14.18

Existing Demand Scenario

Import (per Meter Register (Separate)) & Export [kWh]

Average per Day per Season

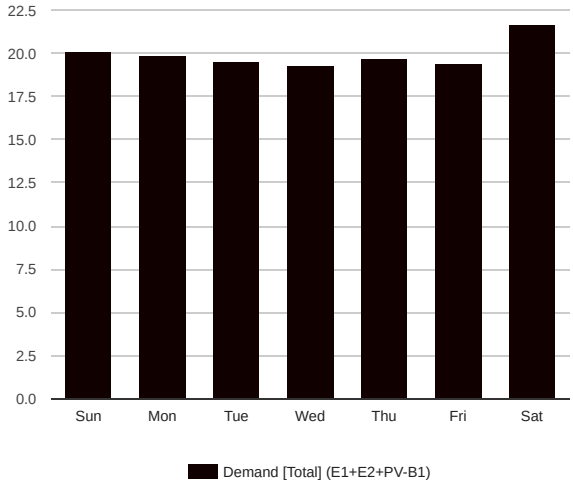


	Import (E1)	Import (E2)	Export (B1)
Summer	7.95	3.18	2.72
Autumn	13.39	6.71	1.22
Winter	13.41	5.54	0.67
Spring	9.45	4.73	2.41

Existing Demand Scenario

Demand (Estimated) (on All Meter Registers) [kWh]

Average per Day per Day Of Week



	Demand [Total] (E1+E2+PV-B1)
Sun	20.06
Mon	19.85
Tue	19.50
Wed	19.25
Thu	19.71
Fri	19.41
Sat	21.66

Existing Demand Scenario

Where Demand (on All Meter Registers) is currently Supplied From [kWh]

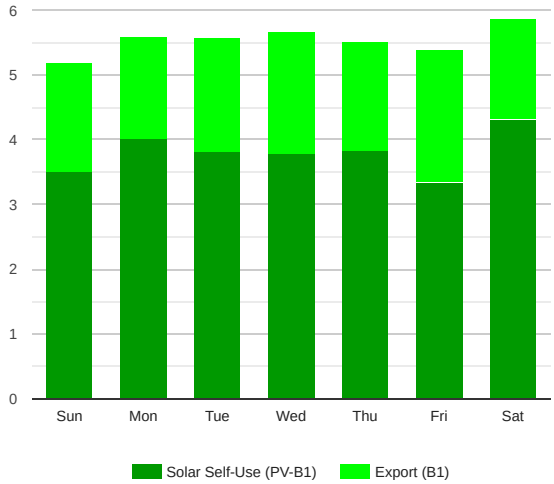
Average per Day per Day Of Week

	Import (E1)	Import (E2)	Solar Self-Use (PV-B1)
Sun	11.01	5.54	3.50
Mon	11.05	4.80	4.00
Tue	10.88	4.81	3.81
Wed	10.50	4.98	3.77
Thu	11.07	4.82	3.82
Fri	11.46	4.61	3.35
Sat	11.53	5.82	4.31

Existing Demand Scenario

Where Solar Yield currently Flows To [kWh]

Average per Day per Day Of Week



	Solar Self-Use (PV-B1)	Export (B1)
Sun	3.50	1.69
Mon	4.00	1.59
Tue	3.81	1.77
Wed	3.77	1.90
Thu	3.82	1.69
Fri	3.35	2.04
Sat	4.31	1.55

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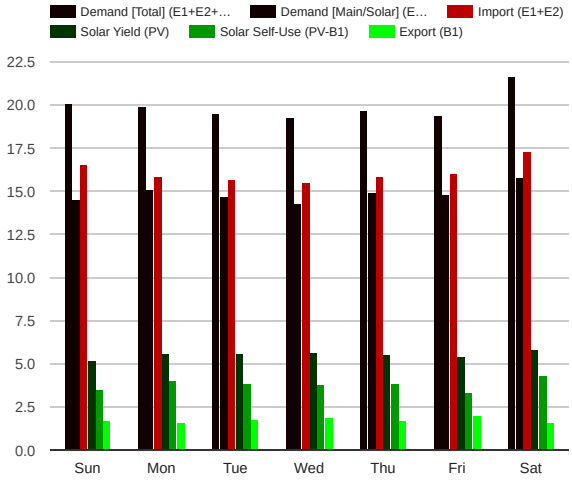
Existing Demand Scenario

Demand (Estimated Existing), Solar Yield (Estimated Existing), Solar Self-Use, Solar Export & Mains Import (Sum Total on All Meter Registers) [kWh]

Average per Day per Day Of Week



	Demand [Total] (E1+E2+PV-B1)	Demand [Main/Solar] (E1+PV-B1)	Import (E1+E2)	Solar Yield (PV)	Solar Self-Use (PV-B1)	Export (B1)
Sun	20.06	14.52	16.56	5.19	3.50	1.69
Mon	19.85	15.05	15.85	5.60	4.00	1.59
Tue	19.50	14.69	15.69	5.58	3.81	1.77
Wed	19.25	14.28	15.48	5.67	3.77	1.90
Thu	19.71	14.89	15.88	5.51	3.82	1.69
Fri	19.41	14.81	16.07	5.38	3.35	2.04
Sat	21.66	15.84	17.34	5.87	4.31	1.55

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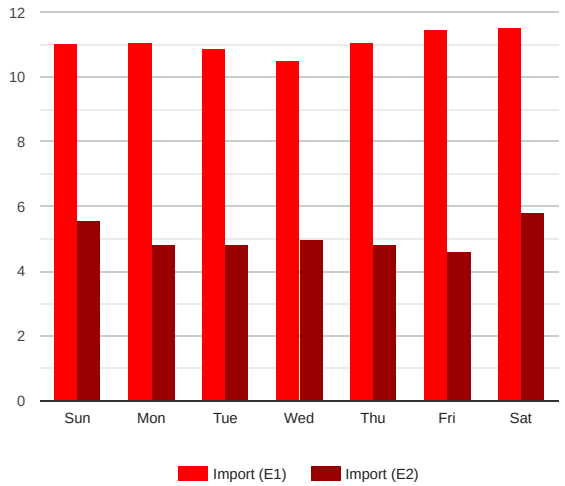
Existing Demand Scenario

Import (per Meter Register (Separate)) [kWh]

Average per Day per Day Of Week

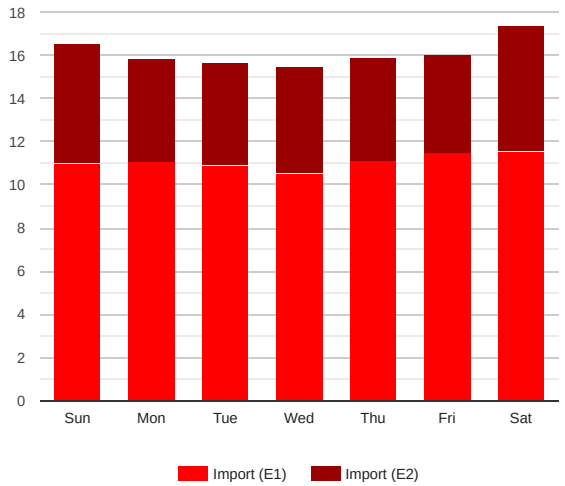


	Import (E1)	Import (E2)
Sun	11.01	5.54
Mon	11.05	4.80
Tue	10.88	4.81
Wed	10.50	4.98
Thu	11.07	4.82
Fri	11.46	4.61
Sat	11.53	5.82

Existing Demand Scenario

Import (per Meter Register (Stacked)) [kWh]

Average per Day per Day Of Week



	Import (E1)	Import (E2)
Sun	11.01	5.54
Mon	11.05	4.80
Tue	10.88	4.81
Wed	10.50	4.98
Thu	11.07	4.82
Fri	11.46	4.61
Sat	11.53	5.82

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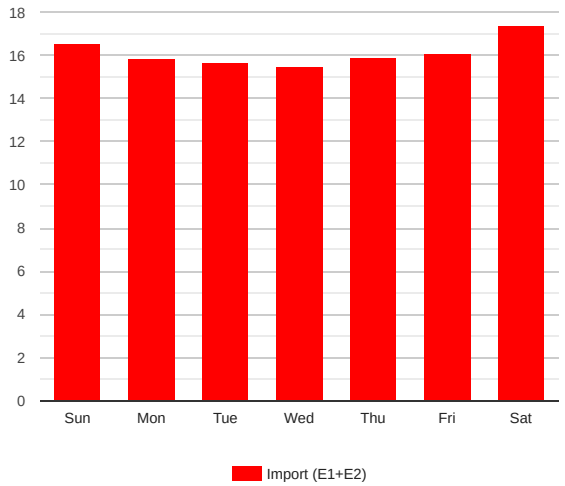
Existing Demand Scenario

Import (Sum Total of All Meter Registers) [kWh]

Average per Day per Day Of Week

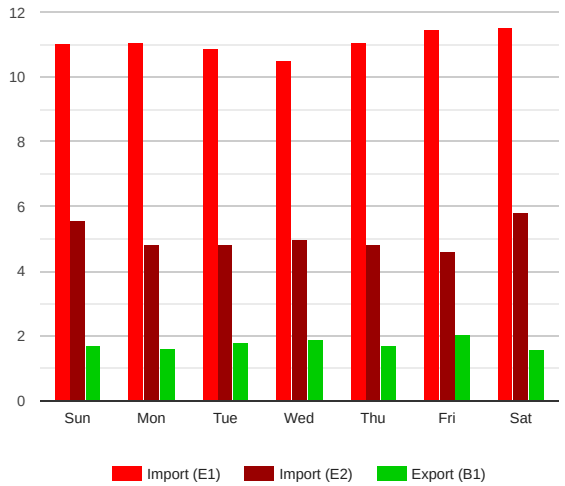


	Import (E1+E2)
Sun	16.56
Mon	15.85
Tue	15.69
Wed	15.48
Thu	15.88
Fri	16.07
Sat	17.34

Existing Demand Scenario

Import (per Meter Register (Separate)) & Export [kWh]

Average per Day per Day Of Week

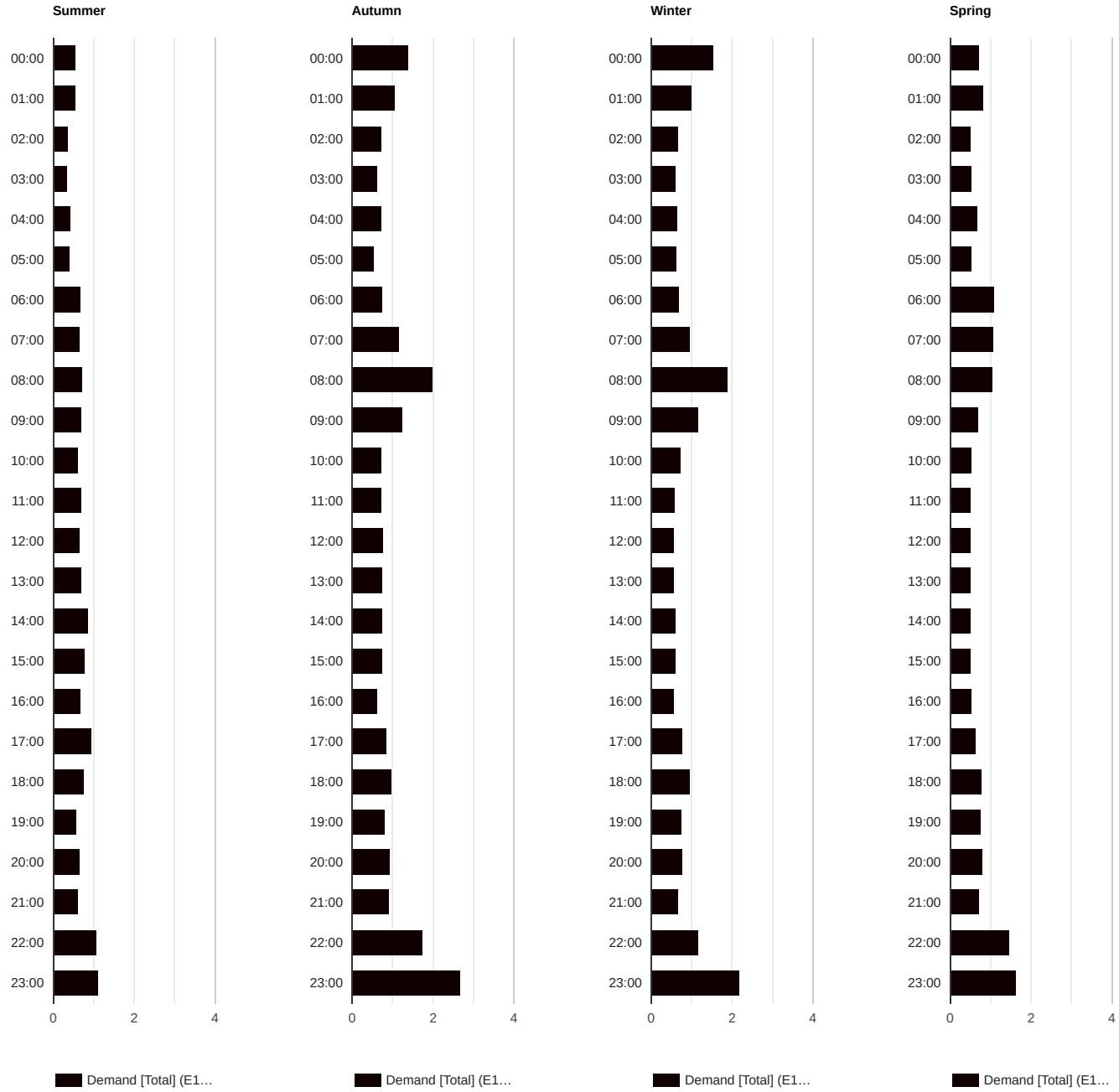


	Import (E1)	Import (E2)	Export (B1)
Sun	11.01	5.54	1.69
Mon	11.05	4.80	1.59
Tue	10.88	4.81	1.77
Wed	10.50	4.98	1.90
Thu	11.07	4.82	1.69
Fri	11.46	4.61	2.04
Sat	11.53	5.82	1.55

Existing Demand Scenario

Demand (Estimated) (on All Meter Registers) [kWh]

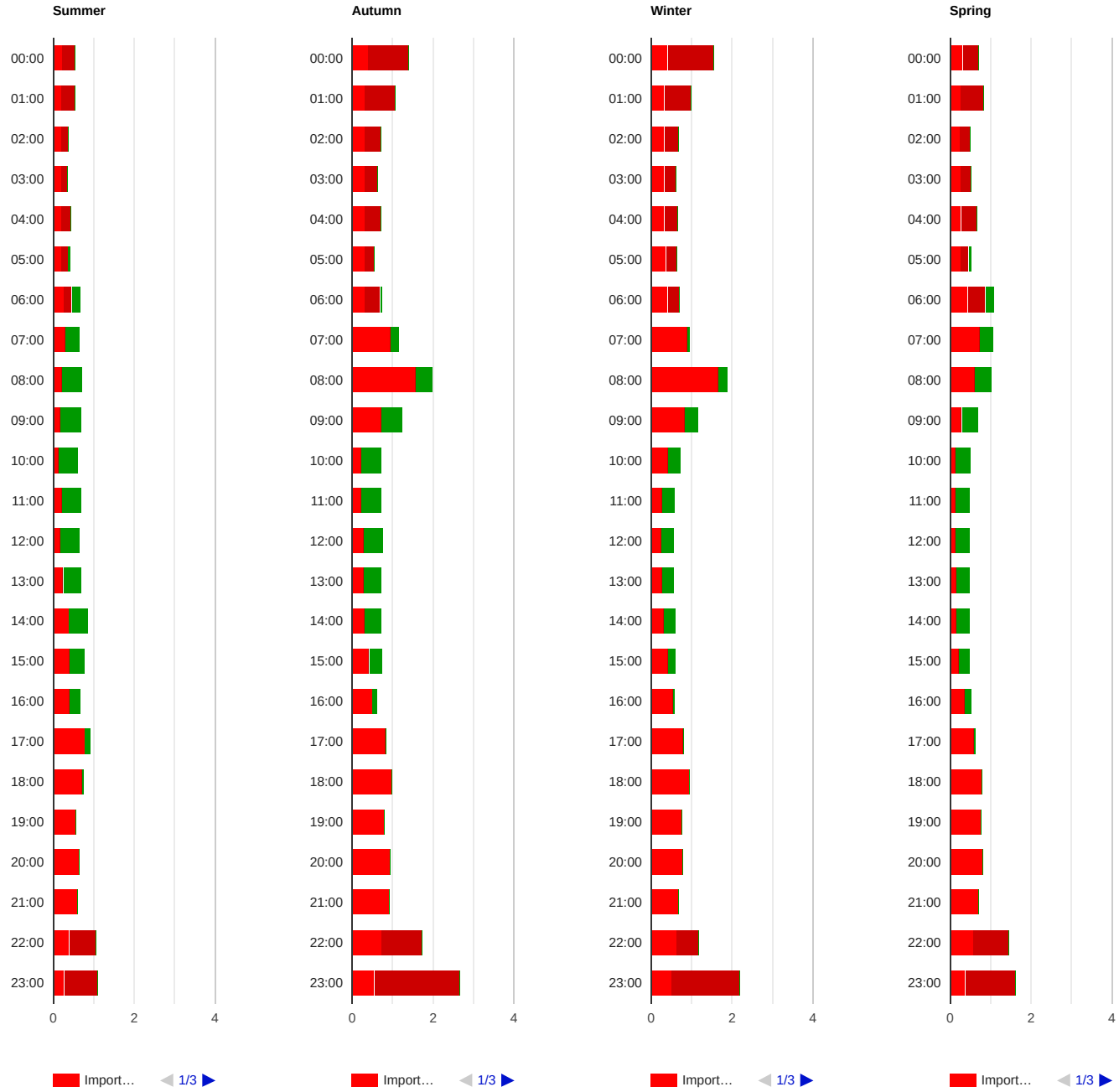
Average per Hour per Season



Existing Demand Scenario

Where Demand (on All Meter Registers) is currently Supplied From [kWh]

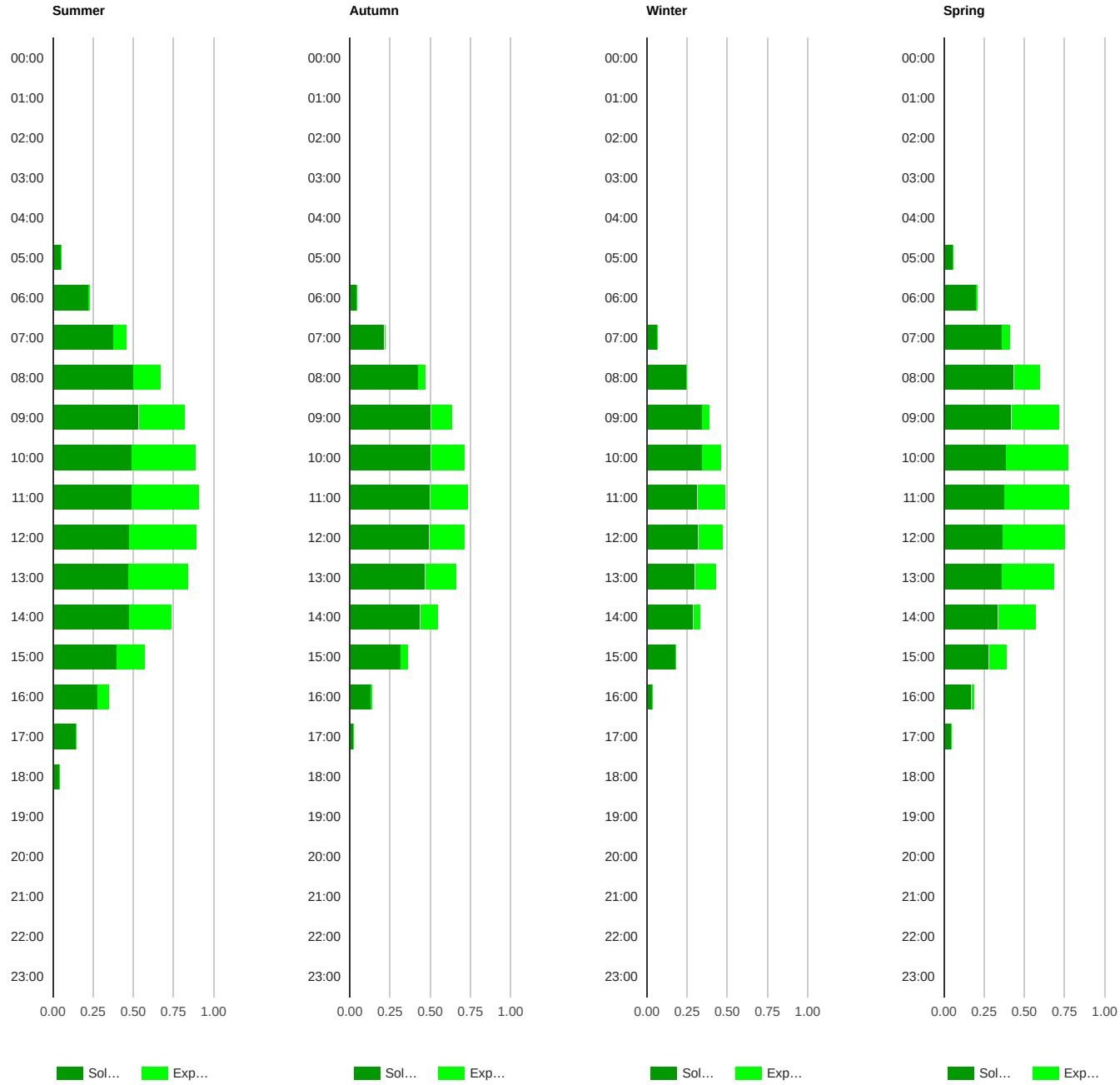
Average per Hour per Season



Existing Demand Scenario

Where Solar Yield currently Flows To [kWh]

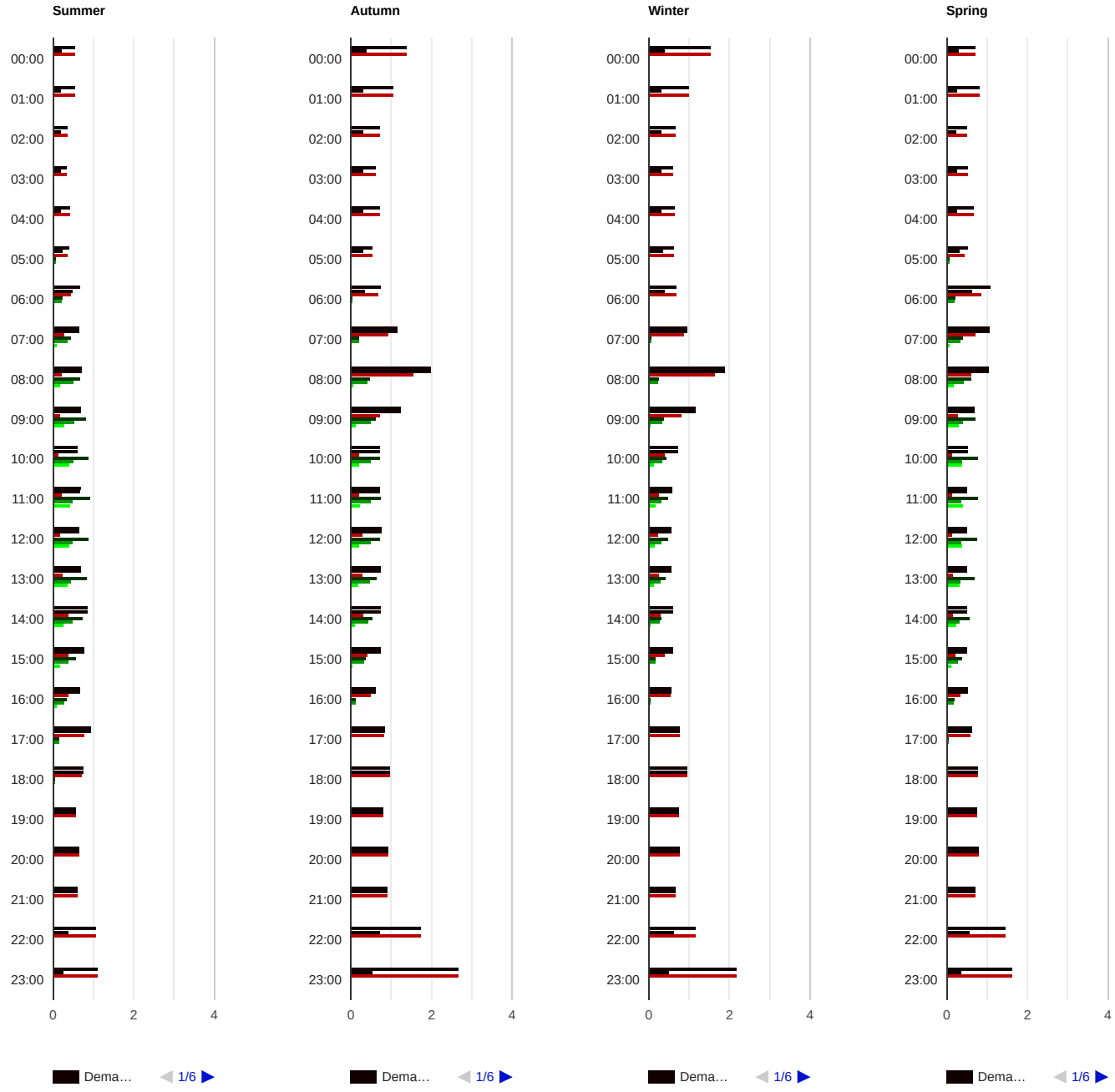
Average per Hour per Season



Existing Demand Scenario

Demand (Estimated Existing), Solar Yield (Estimated Existing), Solar Self-Use, Solar Export & Mains Import (Sum Total on All Meter Registers) [kWh]

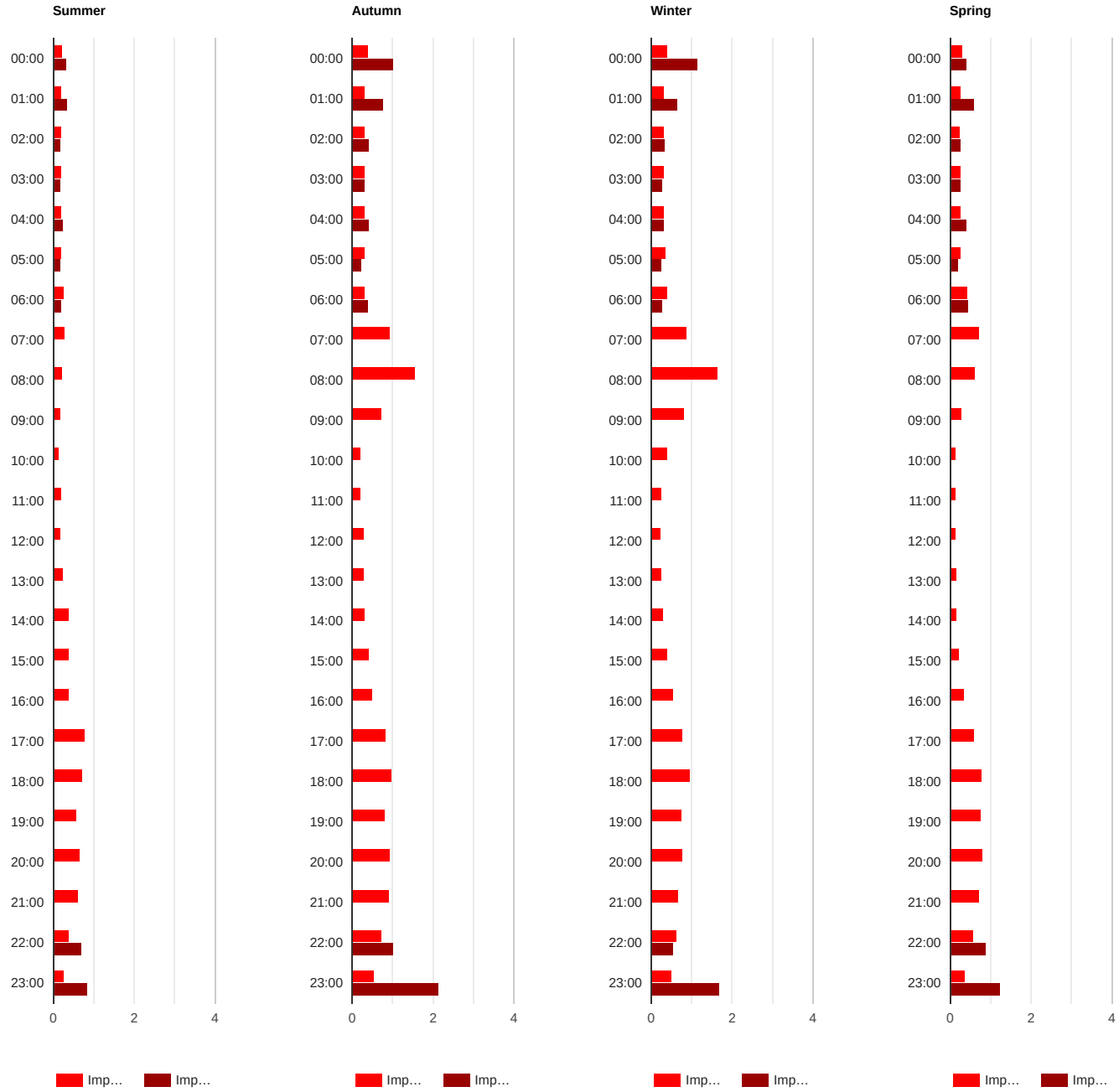
Average per Hour per Season



Existing Demand Scenario

Import (per Meter Register (Separate)) [kWh]

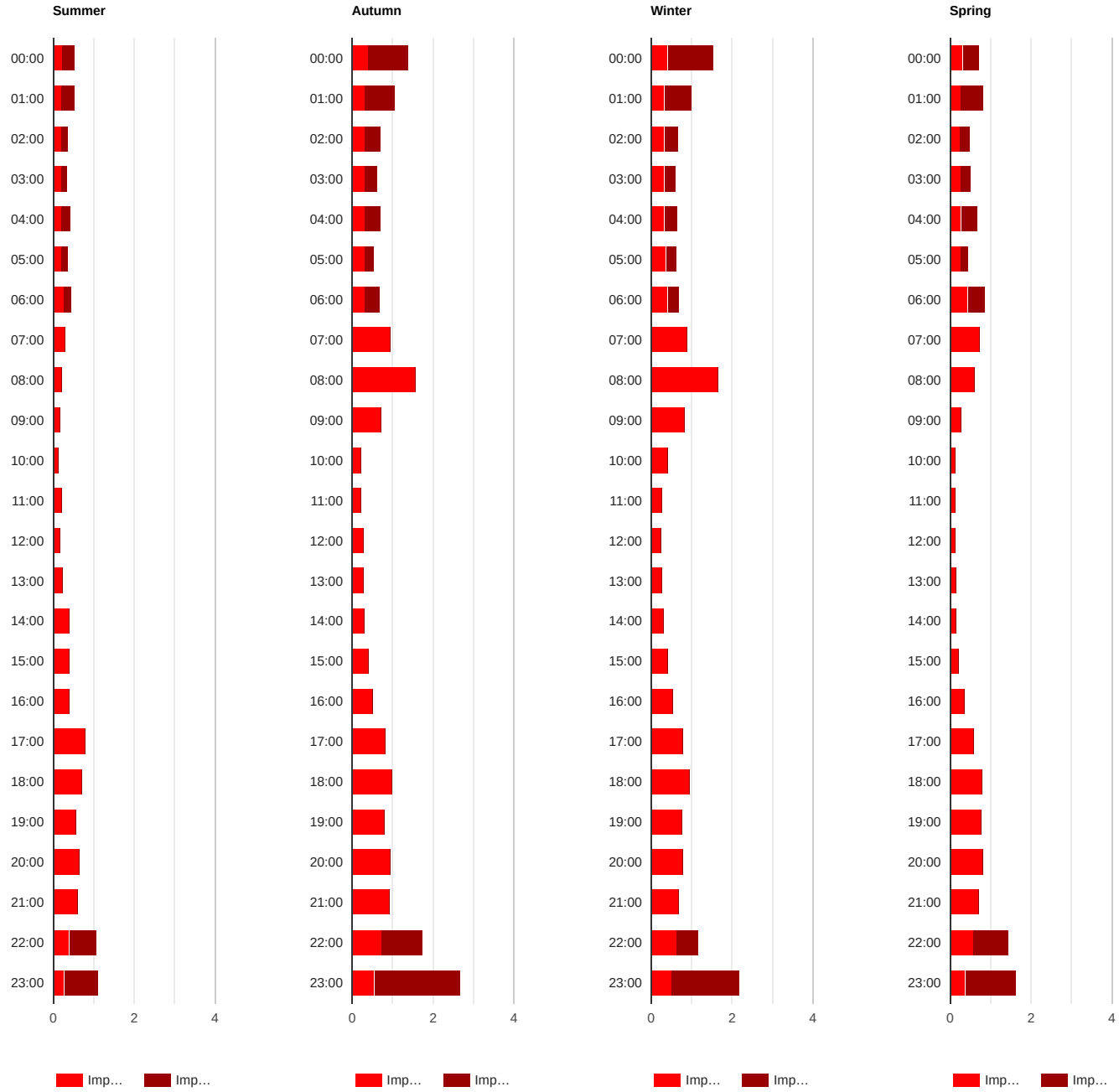
Average per Hour per Season



Existing Demand Scenario

Import (per Meter Register (Stacked)) [kWh]

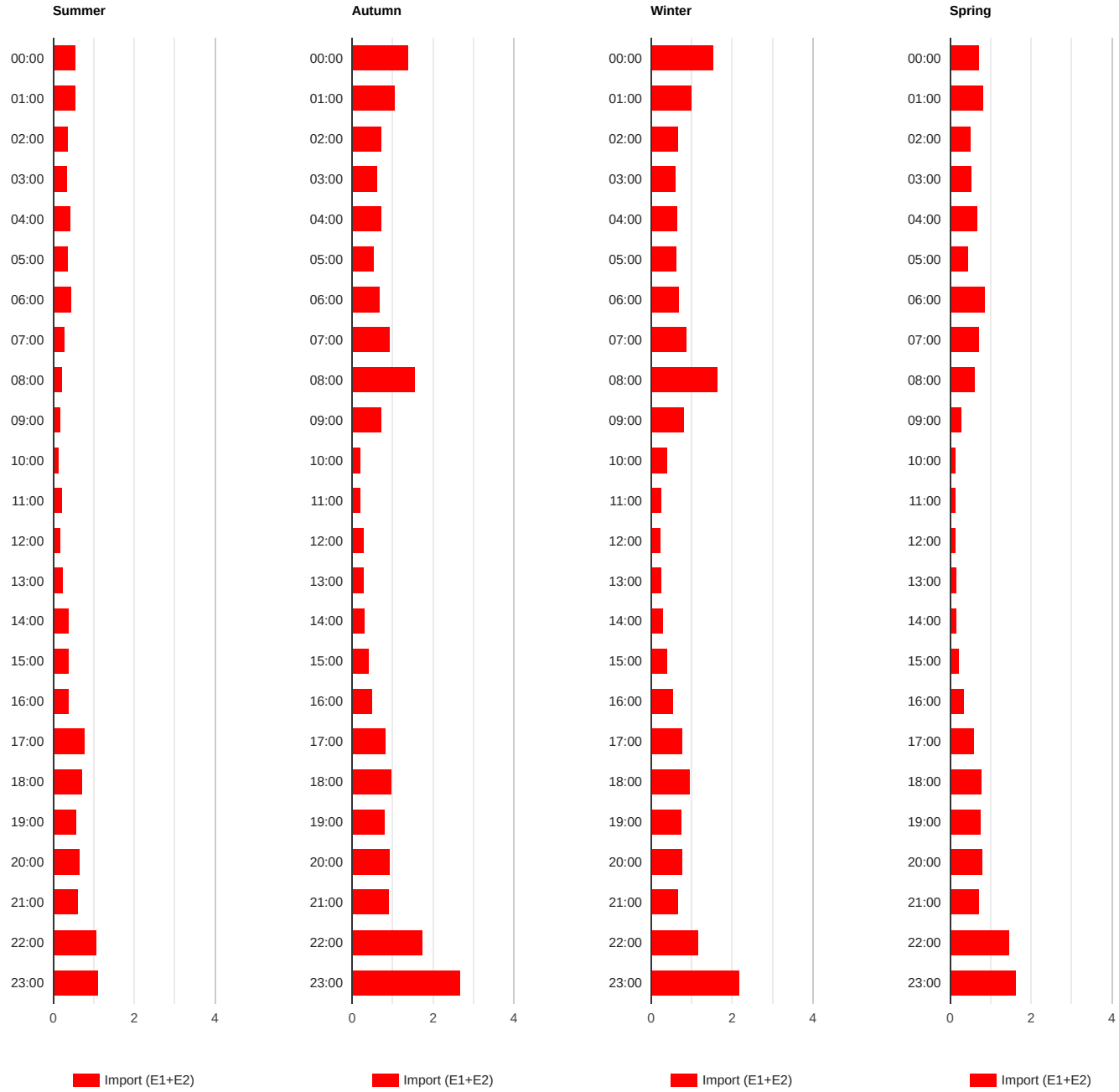
Average per Hour per Season



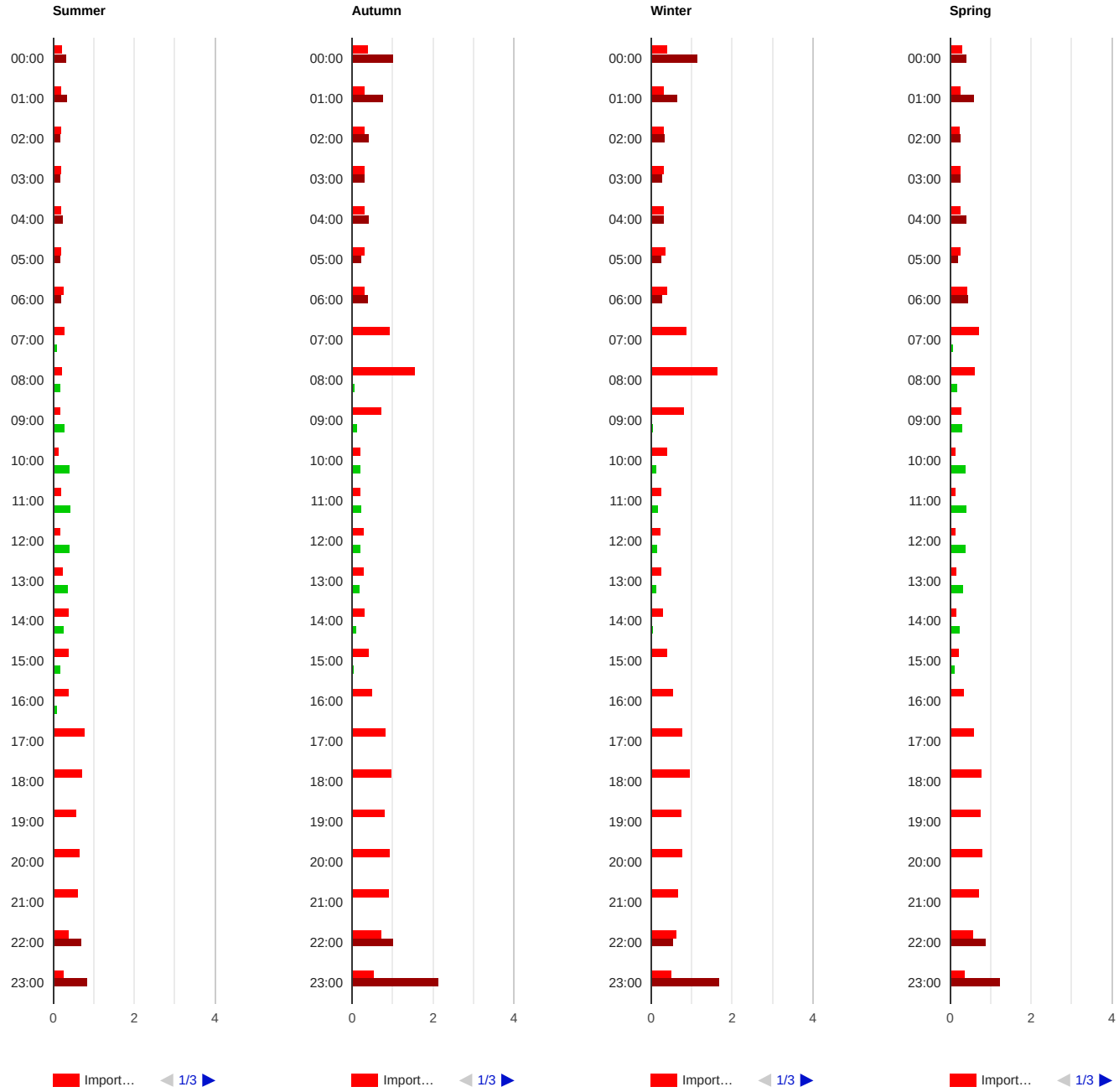
Existing Demand Scenario

Import (Sum Total of All Meter Registers) [kWh]

Average per Hour per Season



Existing Demand Scenario

Import (per Meter Register (Separate)) & Export [kWh]

Average per Hour per Season