

Summary

Project data

Project number	2023-0056	Company
Commission		Customer
Street		Street
Post code / city		Post code / city
Date	05.03.2023	Phone
		Mobile
		E-mail

Site data

Continent	Europe
Country Id	Germany
Post code	96231
City	Bad Staffelstein (Zentrum)
Longitude	11,00 °E
Latitude	50,10 °N
Weather data	Bad Staffelstein
Annual amount of horizontal irradiation	1 067 kWh/m ²
Source with period	DWD (1981 - 2000)
Altitude	276 m
Terrain category	Terrain category III (suburbs and industrial areas)
Terrain type	normal
Exposed location	None
Reliability factor	1,0
Average snow load at ground level	0,85 kN/m ²
Wind pressure	0,32 kN/m ²
Snow load zone	2
Wind load zone	1

Liability for accuracy and completeness cannot be accepted.

NRG Project Sp. z o.o. ul. Łódzka 78 95-054 Ksawerów Polska

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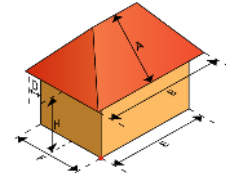
Trade register KRS:
0000634988

VAT No. 5252669805

Summary

Area - South-facing roof 1 (Rectangular building 1)

Installed capacity	63,18 kWp	Quantity of modules	162 St.	Utilised area	297,99 m ²
Overhang front eaves		Hip roof			
Eaves length (B)	42,50 m				
Verge legth (A)	12,70 m				
Ridge height (C)	12,35 m				
Orientation north (δ)	180 °				
Roof Inclination (α)	30 °				
Subconstruction	Rafter				
Covering	Double pantile				
Module manufacturer	Meyer Burger				
Module type	Meyer Burger White 390				
Dimensions of module (LxWxH)	1 767 mm x 1 041 mm x 35 mm				
Module assembly	Vertical				
Mounting structure	TopFix200				
Mounting system	Single-Layer				
Module carrier profile description	TF50+ (2.25m)				
Fastener	Roof Hook Standard S+				
Distance between fasteners	0,80 m				



The static and compliant dimensioning and fixing to the subconstruction must be undertaken by a stress analyst on site according to the on-site conditions.

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Summary

Connection - Group 1

Quantity of inverters	2 St.		
Specific yield forecasted	1 014 kWh/kWp *	Performance ratio	81,81 %

* The calculated specific yield does not include cable losses.

Chosen inverter configuration for:

162 Modules of type Meyer Burger White 390

	1. Invertertype	2. Invertertype
Quantity	1 x	1 x
Type	SMA CORE-1 STP 50-41	SMA STP 10.0-3AV-40
Dimensioning	107,15%	102,42%
Installed capacity	53 Wp	10 Wp
Power factor cos(φ)	0,90	0,90
AC effective power	45 000 W	9 000 W
AC apparent power	50 000 VA	10 000 VA
1. DC input	1 x 20 Meyer Burger White 390	1 x 14 Meyer Burger White 390
2. DC input	1 x 20 Meyer Burger White 390	unused
3. DC input	1 x 20 Meyer Burger White 390	1 x 12 Meyer Burger White 390
4. DC input	unused	not available
5. DC input	1 x 20 Meyer Burger White 390	not available
6. DC input	unused	not available
7. DC input	1 x 20 Meyer Burger White 390	not available
8. DC input	unused	not available
9. DC input	1 x 19 Meyer Burger White 390	not available
10. DC input	unused	not available
11. DC input	1 x 17 Meyer Burger White 390	not available
12. DC input	unused	not available

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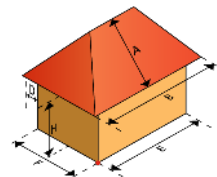
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Summary

Area - West-facing roof 3 (Rectangular building 1)

Installed capacity	17,78 kWp	Quantity of modules	45 St.	Utilised area	87,87 m ²
Overhang front eaves		Hip roof			
Eaves length (B)		22,00 m			
Verge length (A)		12,70 m			
Ridge height (C)		12,35 m			
Orientation north (δ)		270 °			
Roof Inclination (α)		30 °			
Subconstruction		Rafter			
Covering		Double pantile			
Module manufacturer		IBC SOLAR			
Module type		IBC MonoSol 395 GS10-HC Black			
Dimensions of module (LxWxH)		1 722 mm x 1 134 mm x 30 mm			
Module assembly		Vertical			
Mounting structure		TopFix200			
Mounting system		Single-Layer			
Module carrier profile description		TF50+ (2.25m)			
Fastener		Roof Hook Standard S+			
Distance between fasteners		0,80 m			



The static and compliant dimensioning and fixing to the subconstruction must be undertaken by a stress analyst on site according to the on-site conditions.

Connection - Group 2

Quantity of inverters	2 St.		
Specific yield forecasted	772 kWh/kWp *	Performance ratio	77,25 %

* The calculated specific yield does not include cable losses.

Chosen inverter configuration for:

45 Modules of type IBC MonoSol 395 GS10-HC Black

	1. Invertertype	2. Invertertype
Quantity	1 x	1 x
Type	SMA Sunny Tripower X 12	SMA SB 4.0-1AV-41
Dimensioning	113,05%	109,72%
Installed capacity	13 Wp	4 Wp
Power factor cos(φ)	0,90	0,90
AC effective power	10 800 W	3 600 W
AC apparent power	12 000 VA	4 000 VA
1. DC input	1 x 13 IBC MonoSol 395 GS10-	1 x 7 IBC MonoSol 395 GS10-
2. DC input	unused	unused
3. DC input	1 x 11 IBC MonoSol 395 GS10-	1 x 4 IBC MonoSol 395 GS10-
4. DC input	unused	unused
5. DC input	1 x 10 IBC MonoSol 395 GS10-	not available
6. DC input	unused	not available

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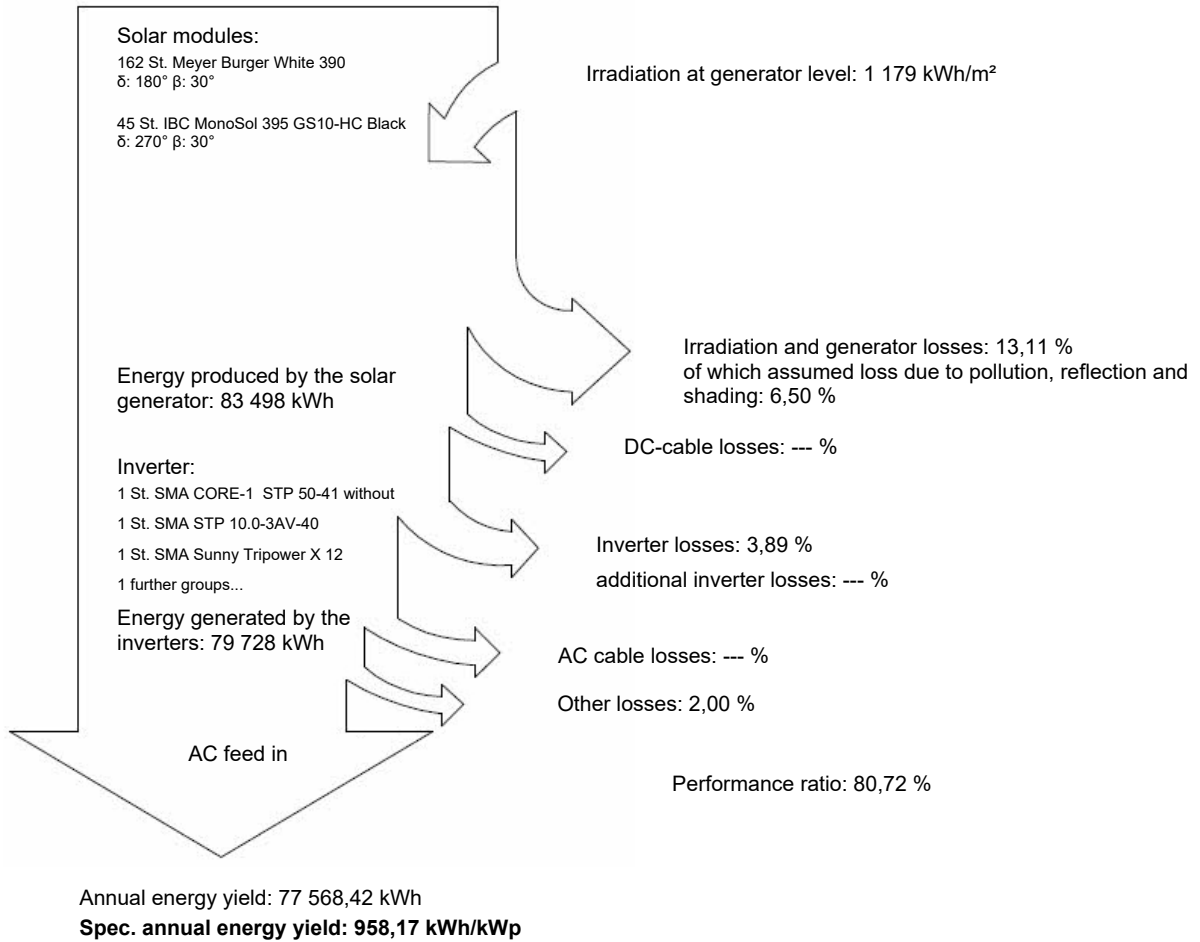
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Summary

Yield forecast – energy flow diagram

Irradiation horizontal: 1 067 kWh/m², location: Bad Staffelstein, source: DWD (1981 - 2000)



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Summary

Load profiles

Sum of load profiles	62 994 kWh
Load profile: Household HTW, consumption mainly morning and evening	60 000 kWh
E-Mobility: Audi e-tron GT	2 994 kWh

E-Mobility

Electric Car:	Audi e-tron GT
Battery capacity	93,0 kWh
Energy consumption per 100 km	18,8 kWh
Annual driving distance	15 130 km
Energy demand (at home)	2 994 kWh
Energy demand total	2 844 kWh

Self-consumption and storage

Annual energy consumption	62 994 kWh
Degree of independence	
Without storage system	28,63 %
With storage system	69,88 %
Percentage of selfconsumption	
Without storage system	23,18 %
With storage system	64,93 %
Storage system	User defined
Total capacity	200,00 kWh
Maximum discharge by	90 %
Maximum charge power	50,00 kW
Maximum discharge power	50,00 kW

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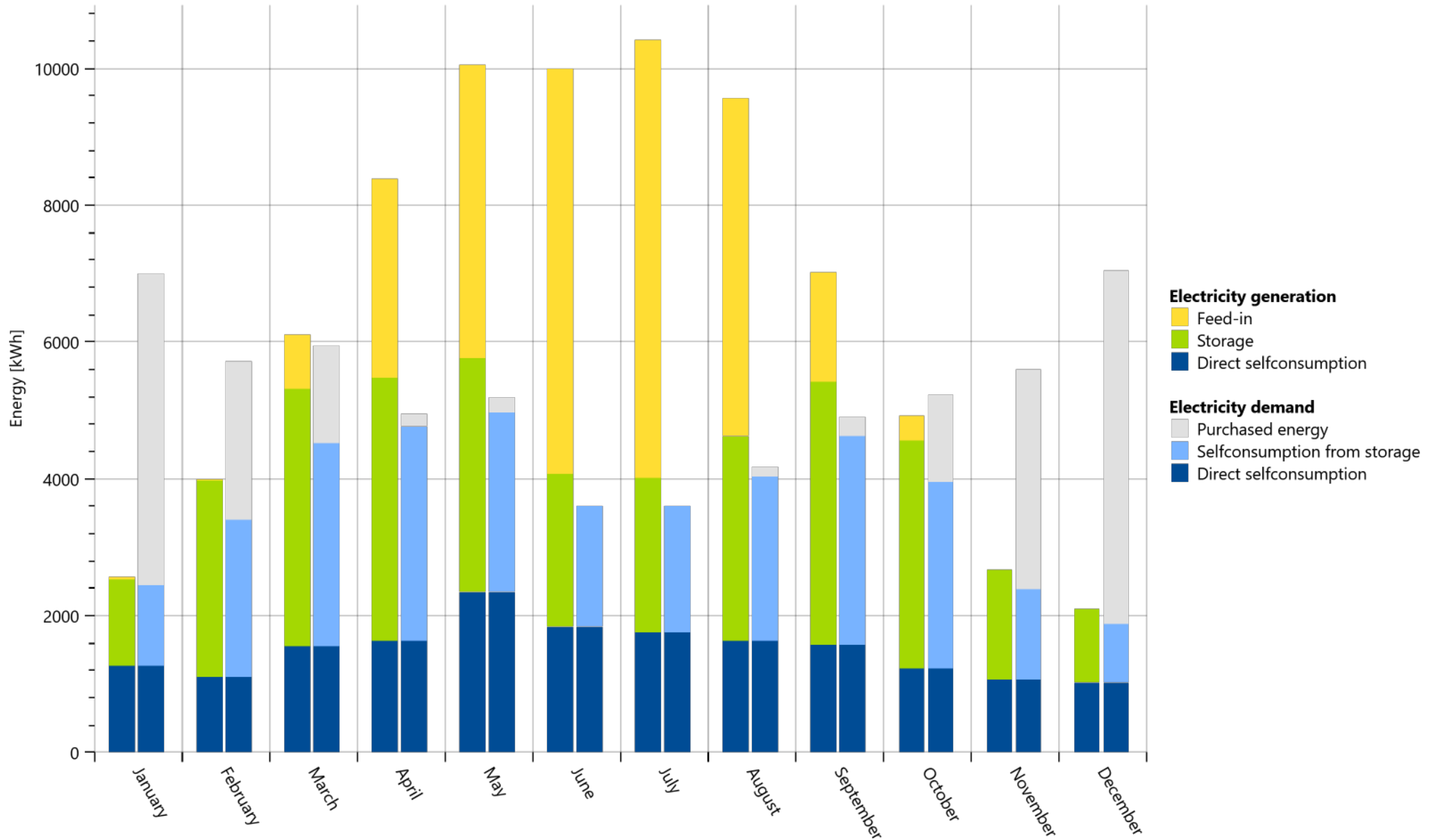
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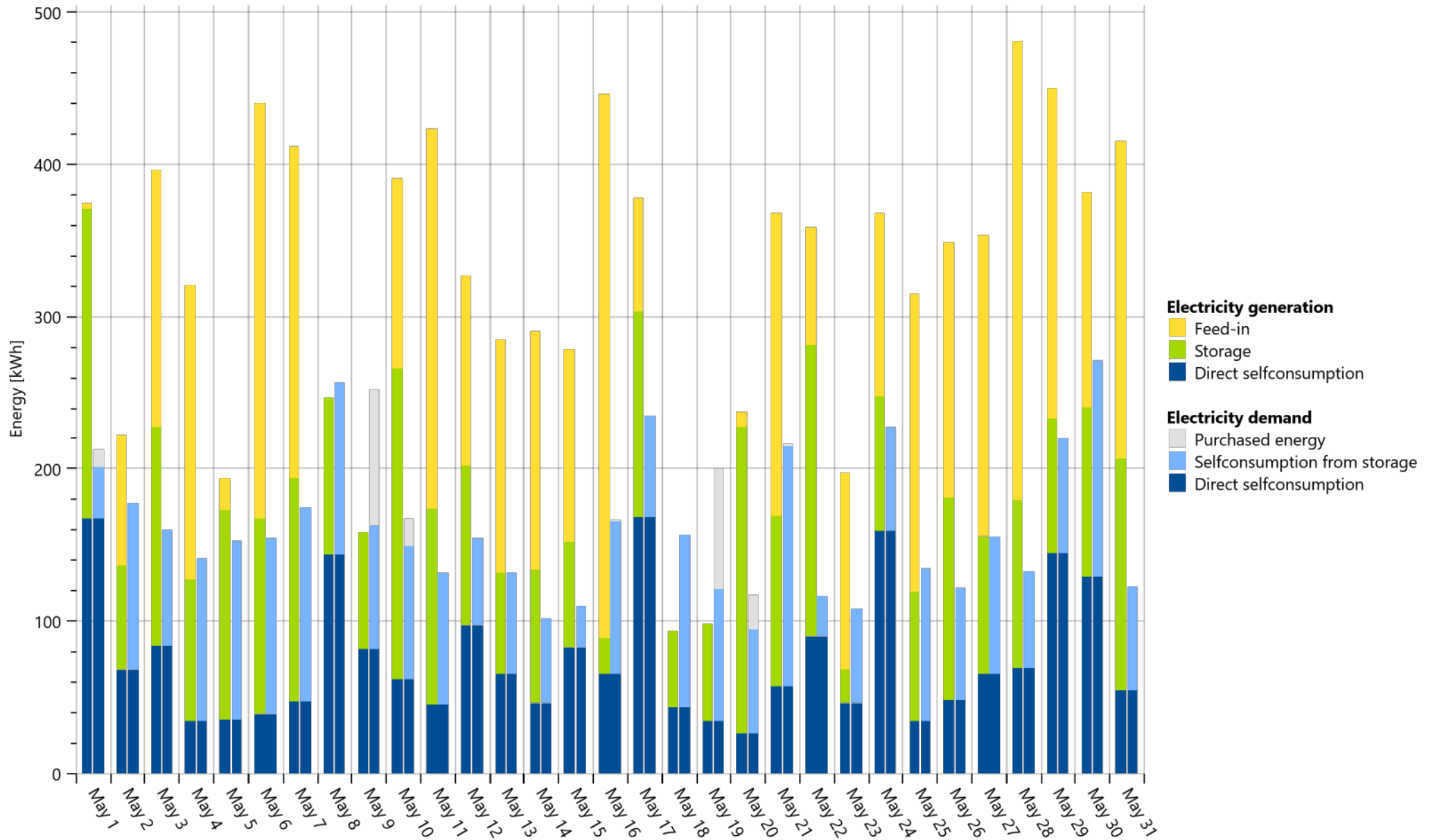
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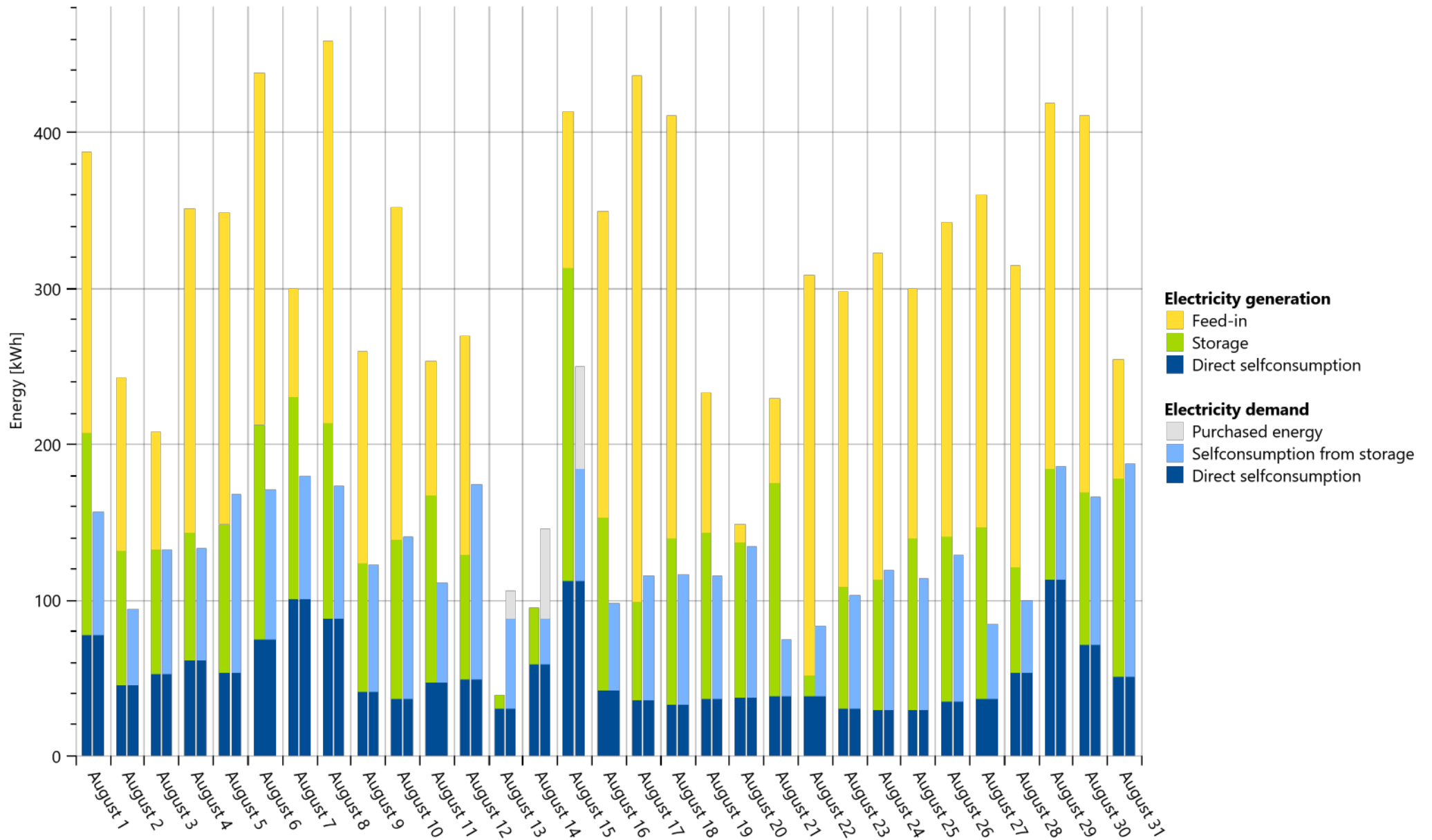
Electrical generation chart (Year)



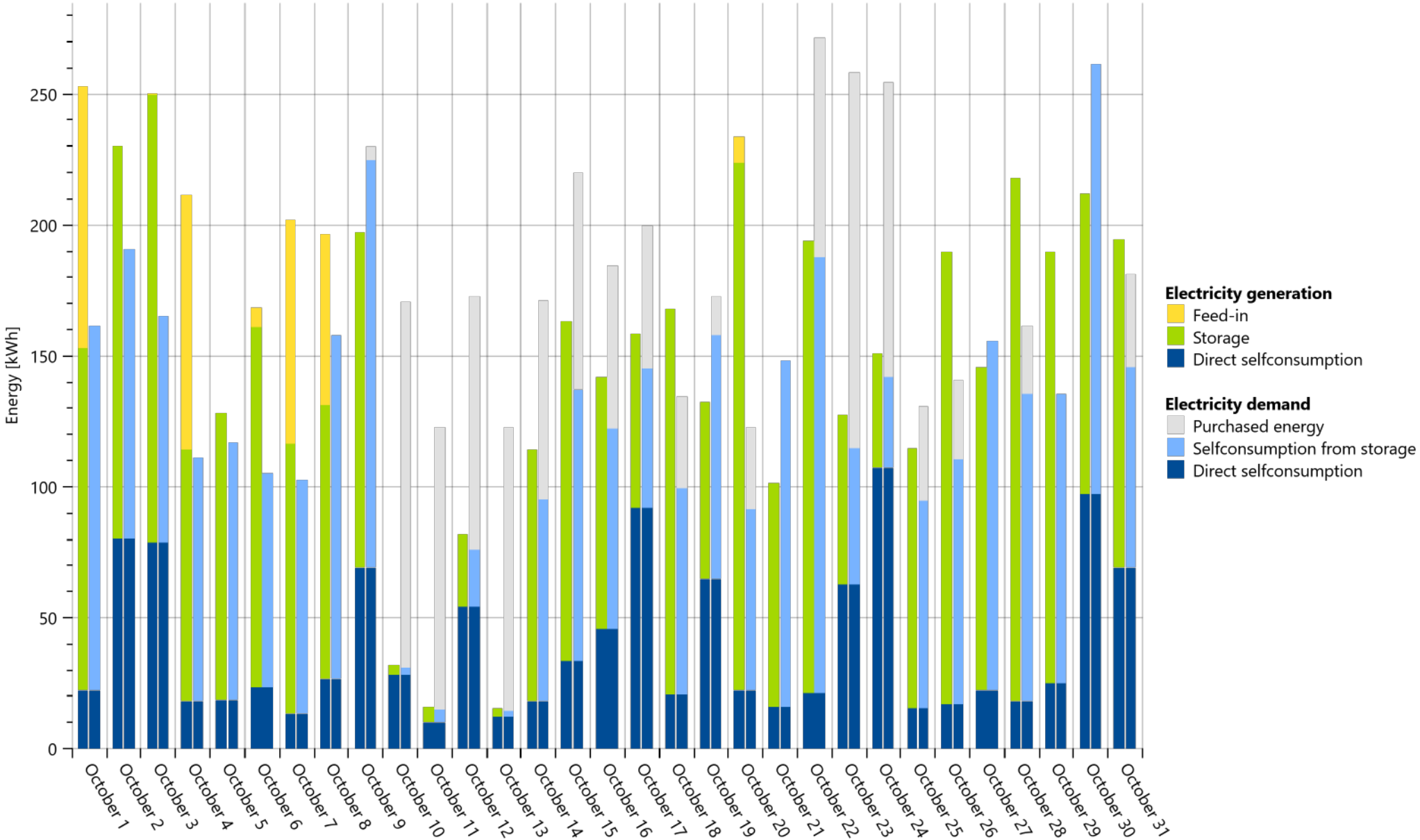
Electrical generation chart (Month May)



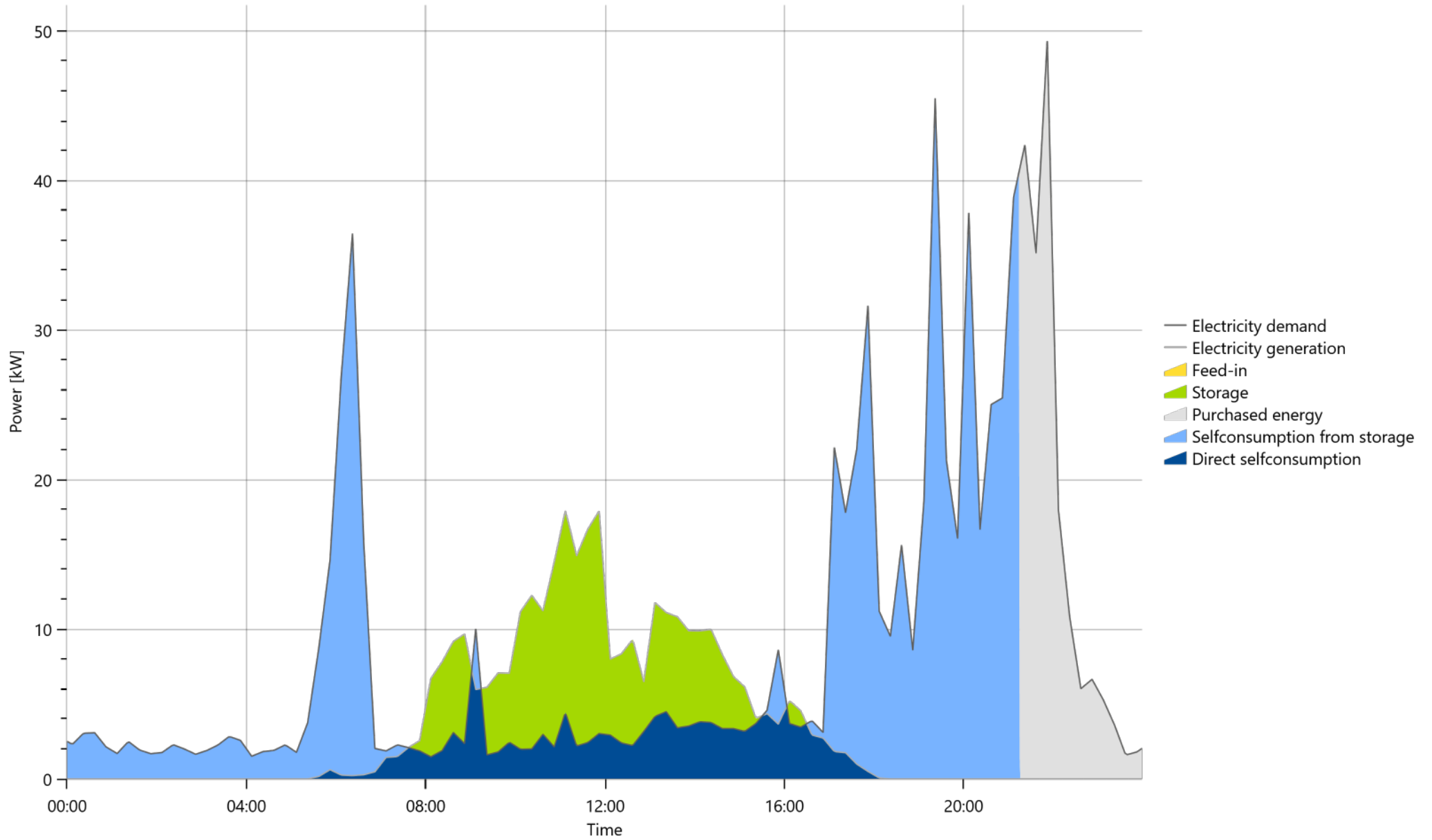
Electrical generation chart (Month August)



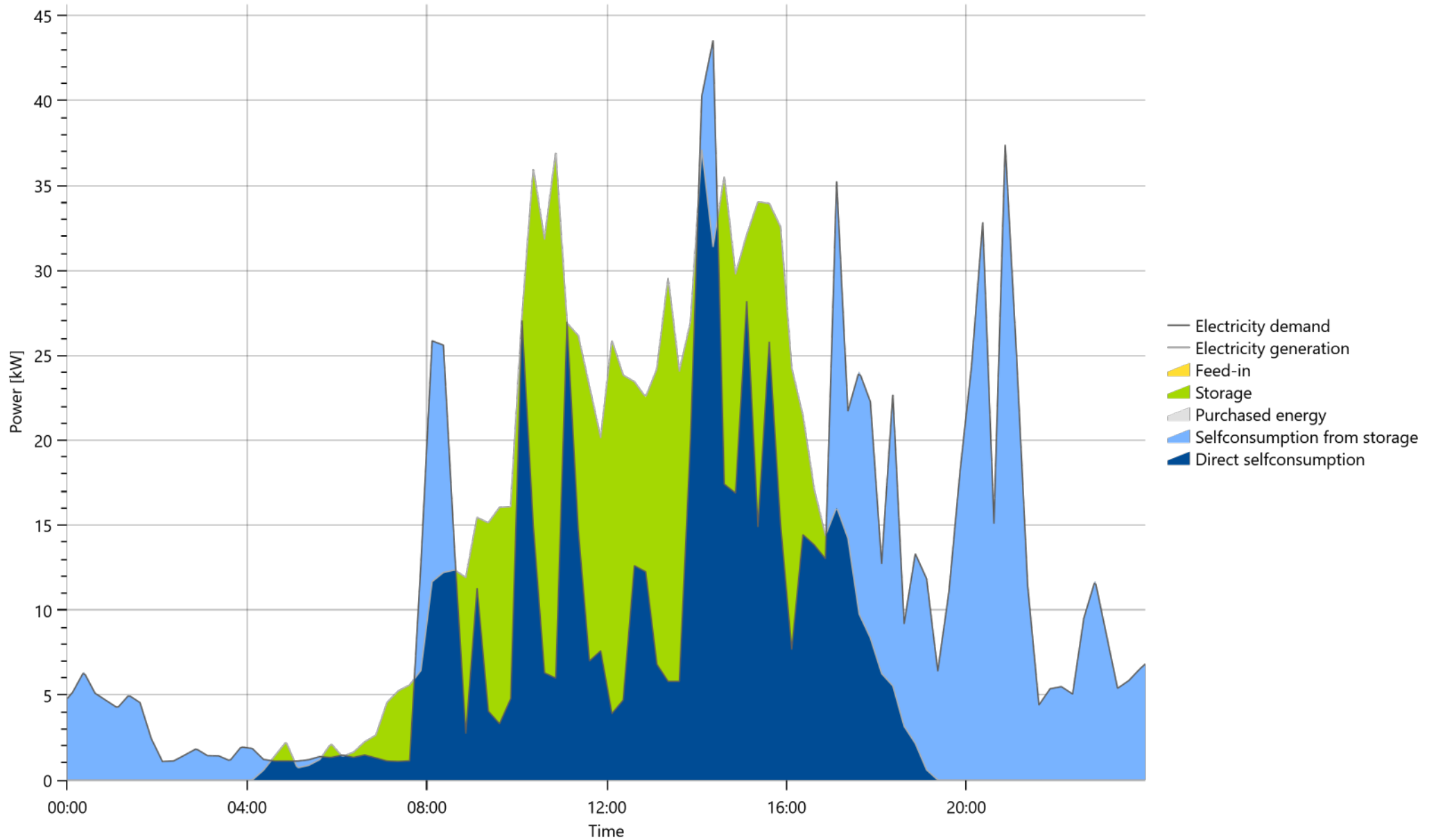
Electrical generation chart (Month October)



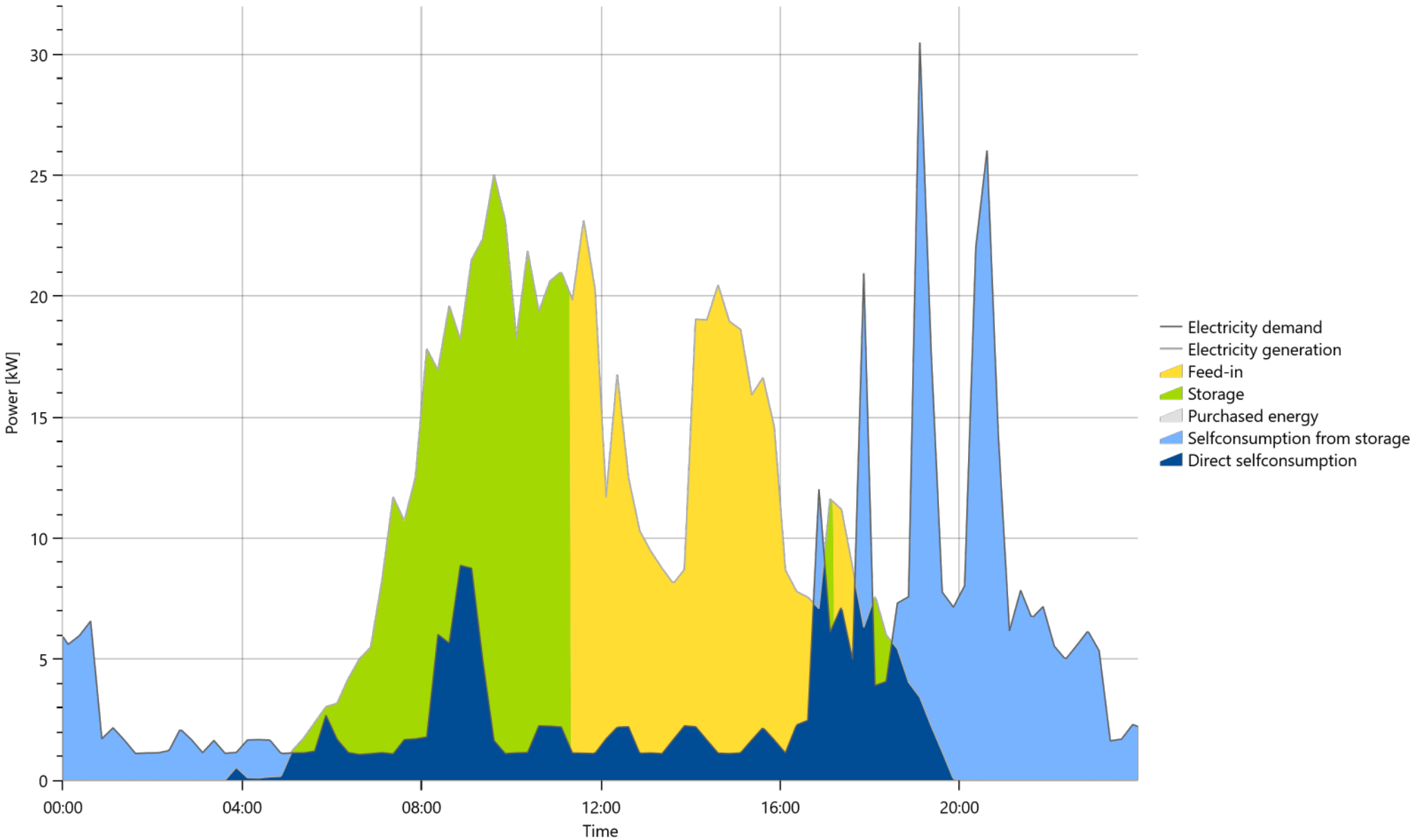
Electrical generation chart (Day: March 30)



Electrical generation chart (Day: May 8)



Electrical generation chart (Day: June 10)



Load curve (Year)

