

	p ROOFTOP, ORIENTED	SOUTH										
Date of factsheet	11-7-2019											
Author Sector	Luuk Beurskens Buildings											
Sector	Buildings											
ETS / Non-ETS	Non-ETS											
Type of Technology	Renewable											
Description	Solar photovoltaic (PV) systems convert solar irradiation into electricity. Various types of solar conversion technology types are currently on the market, each differing in terms									terms of costs		
	and efficiency. Examples of such variants comprise crystalline and multi-crystalline silicon PV (mainstream technology), as well as thin film PV (less common technology). This factsheet for solar PV focuses on mainstream technology. The solar modules generate direct current (DC). The DC might be used for off-grid applications, combined with a electricity storage											
	system (a battery), but these systems will not be addressed in this factsheet: off-grid systems are considered niche markets where different pricing mechanisms occur. The major											
	contribution for the Netherlands is expected to be in grid-connected systems. In these, DC from the modules is converted to alternating current (AC) by an inverter. A PV mounting											
	structure allows to fix the panels in the right position: usually a fixed tilt angle and a fixed orientation, although sun-tracking systems are also possible (but in the Netherlands currently											
	more expensive in terms of electricity generation costs). There are three main spatial layouts: firstly a south-facing system, tilted at 30 to 40 degrees, for high energy generation during the year, characterised by high power peaks (at noon) during summer. Secondly, systems may be oriented towards both east and west at a smaller tilt. Advantages of these systems											
	are that more peak capacity can be installed on the available surface (higher kWp/m2) and that the power peak during summer is smaller, with a more balanced power generation											
	during the day as a result. For the Netherlands, these two layout variants are the most common, and both can be realised on rooftops and in field installations. Solar tracked systems											
	comprise a third system type, which maximise electrity generation by actively adjusting the inclination angle and orientation. This type of system may be applied in solar fields, at a higher investment cost and more operational expenses, plus more land use due to the wider spatial requirements. Other variants of solar PV applications exist as well, such as floating											
	PV or facade PV, integrated in bu		· ·								_	
	component determining the total			•			· ·	•	•		•	
	are getting more weight. Examp	•						•	•			
	reduced by increasing the project		_	-						· · · · · · · · · · · · · · · · · · ·		
	approaches. Bottom line howeve system types will be addressed:			•	•	_		_				
	multi-MW rooftop systems (refe			-	-		_				-	
	that for all layouts two orientation	•	· ·		•			· ·	-		•	
		This factsheet In this factsheet data are presented for a typical 3 kWp system (approximately 10 modules), on a South-facing rooftop with a fixed tilt, inclined.										
	in this factsheet data are presen	ted for a typical 3	kwp system (a	pproximately 1	u modules), on	a South-racing	g roottop with a	a fixed tilt, incli	nea.			
TRL level 2020	TRL 9	and the Car CDC	5 2010 family a D									
TECHNICAL DIMENSIONS	Many systems are operational w	orldwide. See CBS	S 2018 for the D	utch realisation	ns.							
TECHNICAL DIIVIENSIONS	Functional Uni	t					Value and Ran	ge .				
Capacity	MW	Value and Range 0										
				0			-			0		
	NL	MW		Current			2030			2050		
Potential				4,000			14,000			41,000		
			4,000	-	4,000	14,000	-	14,000	41,000	-	41,000	
Market share		%	Min	-	Max	Min	-	Мах	Min	-	Max	
Capacity utlization factor		<b></b>	•	<u> </u>		1			1.00		<u> </u>	
Full-load running hours per year									920.00			
Unit of Activity	PJ/year PJ/year											
Unit of Activity	PJ/year											
Technical lifetime (years)	PJ/year								25.00			
Technical lifetime (years) Progress ratio	PJ/year								25.00			
Technical lifetime (years) Progress ratio Hourly profile											442.004	
Technical lifetime (years) Progress ratio	Reference system assumed here			•	-				/p, based on the	_	•	
Technical lifetime (years) Progress ratio Hourly profile		wth up to 2020. No	ote that all pote	ential data have	been broken o	down into capa	acity range sect	ors, and that tl	/p, based on the	ay be filled eith	ner with South	
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MATERIAL FLOWS (OPTIONAL)											
	Material	Unit	Current			2030			2050		
			-								
Material flows			Min	_	Max	Min	_	Max	Min	_	Max
				-	-		-	-		-	
			Min	_	Max	Min	_	Max	Min	_	Max
Material flows explanation											
EMISSIONS (Non-fuel/energy-related em	nissions or emissions reductions	(e.g. CCS)									
	Substance	Unit	Current		2030			2050			
			-			-			-		
			Min	_	Max	Min	_	Max	Min	-	Max
				-	-		-	-		-	-
Emissions			Min	_	Max	Min	_	Max	Min	-	Max
				-	-		-	-		-	
			Min	_	Max	Min	_	Max	Min	_	Max
				-	-		-	-		-	
			Min	_	Max	Min	_	Max	Min	-	Max
Emissions explanation											
OTHER											
Parameter	Unit	Unit		Current		2030			2050		
				-			-			-	
			Min	_	Max	Min	_	Max	Min	_	Max
				-			-			-	
			Min	_	Max	Min	_	Max	Min	_	Max
				-			-			-	
			Min	_	Max	Min	_	Max	Min	-	Max
			-		-			-			
			Min	_	Max	Min	-	Max	Min	-	Max
Explanation											

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