

Study

MARKET INFO CROATIA – PHOTOVOLTAICS

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on the basis of a decision
by the German Bundestag

IMPRINT

Publisher

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November 2014

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Official websites

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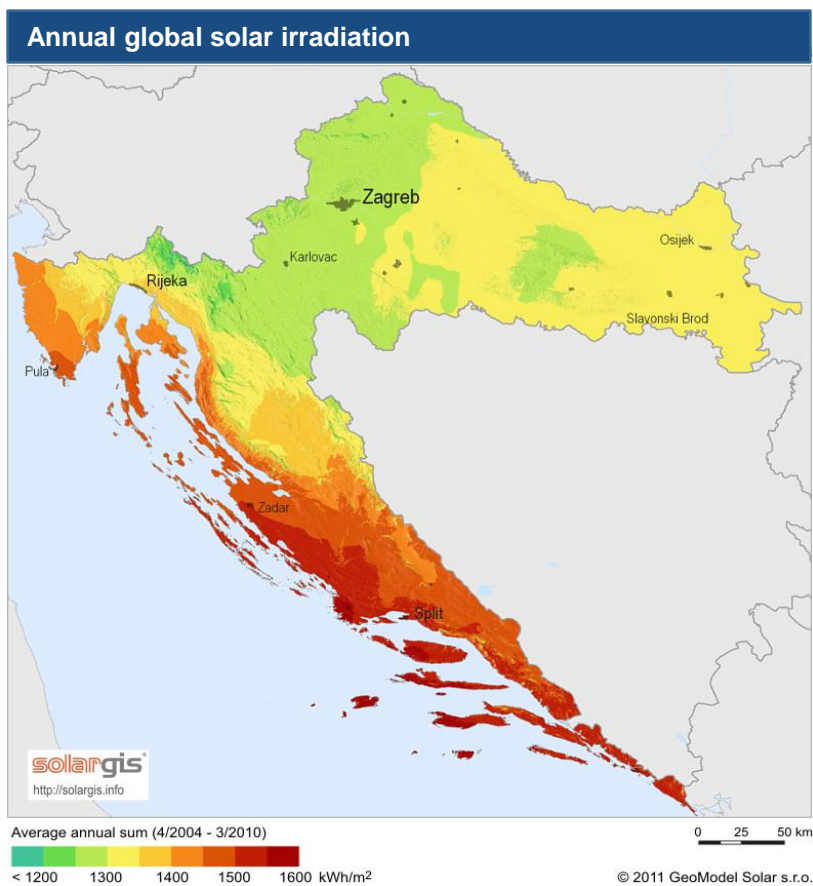
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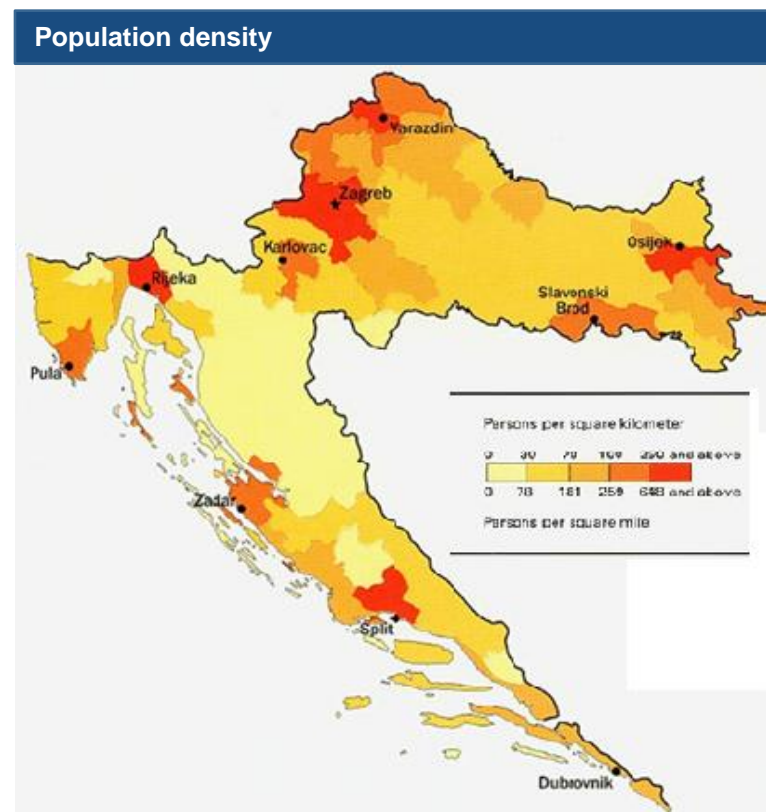
Federal Ministry
for Economic Affairs
and Energy

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SOLAR IRRADIATION & POPULATION DENSITY



Source: Solargis (2012)



Source: Nationmaster (2012)

BASIC DATA

General basic data (2014)			
Area	56,594 km ²	GDP (est.)	328.4 bn HRK (~42.75 bn €*)
Population	4.3 m	GDP per capita (est.)	76,703 HRK (~9,986.07 €*)
Language	Croatian	GDP growth (est.)	0.5 %
Government	Unitary parliamentary constitutional republic	Inflation (est.)	0.8 %
Administrative division	20 counties and the capital city	Unemployment rate (est.)	18 %
Basic energy market data (2012)			
Electricity consumption (total)	17.5 TWh		
Total electricity import	13.1 TWh		
Total electricity generation	9.89 TWh		
Electricity price 2013 (industry, 500 – 2,000 MWh/a)	0.094 € /kWh (excluding taxes)		
Electricity price 2013 (residential, 2,500 – 5,000 kWh/a)	0.137 € /kWh (including VAT etc.)		
Proportion of renewable energy (electricity consumption)	2 % (without hydro power)		
Increase of electricity consumption (since 2005)	+ 1 %		
Global solar irradiation	1,350 kWh/m ² a		

*Average exchange rate March 2014: 1 Euro = 7.681 HRK

PHOTOVOLTAIC MARKET INDICATORS

Indicators				
Market size (annual installed capacity)	2011: 0 MW	2012: 0.2 MW	2013e: 6.4 MW	2014e: 50 MW
National PV target	2020: 52 MWp			
Main market drivers 2014	<ul style="list-style-type: none"> ▪ FIT system since June 2012 for renewable energy sources and cogeneration ▪ High solar radiation levels around the coastal region of Split (about 1,600 kWh / sqm / a) ▪ Cheap loans for PV projects through the Croatian Bank for Reconstruction and Development (HBOR): Interest rate of 4 % per annum and repayment periods of up to twelve years (up to 75 % of the planned investment) 			
FIT 2014	<ul style="list-style-type: none"> ▪ Support scheme: 1.54 HRK / kWh - 1.91 HRK/kWh (from 0.203 € / kWh to 0.252 € / kWh*) for rooftop PV systems (duration: 14 years). See next slide for details. The implementation of the FIT system is carried out by the electricity market operator HROTE and the grid operator HERA. 			
Recent changes in PV regulation 2014	<ul style="list-style-type: none"> ▪ At the end of 2013, a revised FIT scheme (see above) was announced. <ul style="list-style-type: none"> ▪ Remuneration rates for PV systems were reduced. ▪ New rules for self-consumption were introduced. ▪ A PV market cap of 12 MW for the new FIT rates was introduced. ▪ The approval procedures for solar rooftop systems have been extremely simplified: <ul style="list-style-type: none"> ▪ A duration of the procedure of 6 months from project planning to grid connection ▪ Only two permits are required for systems <10 kW and those permits can be issued within 60 days. ▪ In order to feed electricity into the grid private households need the approval of the distribution network operator HEP-ODS and a power purchase agreement with the electricity market operator HROTE. 			

*Annual average exchange rate 2013 from the European Central Bank (ECB): 1 Euro = 7.5786 HRK

MAIN PV SUPPORT SCHEME: FIT 2014

PV FIT (Official Gazette 133/2013, 151/2013)		
Ground-mounted	Roof-top installations	PV / solar thermal combined systems
Systems \leq 5 MWp: Reference price in Official Gazette 116/2013 (average generation costs for electricity) Reference price** in 2014: 0.53 HRK /kWh (~ 7 € ct / kWh).	\leq 10 kWp: 1.91 HRK/kWh (25.20 € ct / kWh*)	\leq 10 kWp: 2.29 HRK / kWh (30.21 € ct / kWh*)
	$10 \leq$ 30 kWp: 1.70 HRK/kWh (22.43 € ct / kWh*)	$10 \leq$ 30 kWp: 1.87 HRK / kWh (24.67 € ct / kWh*)
	$30 \leq$ 300 kWp: 1.54 HRK/kWh (20.32 € ct / kWh*)	$30 \leq$ 300 kWp: 1.59 HRK / kWh (20.98 € ct / kWh*)
Further regulations under the framework of the Renewable Energy Act		
Self-consumption	For the produced electricity that is being consumed on-site the payment is the FIT 2014 as shown above. For the surplus electricity that is fed into the grid the payment is 80 % of FIT. The PV system requirements for self-consumption are roof-top installations with capacity of \leq 300 kWp.	
Market cap	Roof-top installations \leq 300 kWp: 5 MWp, plus 2 MWp on public buildings Ground-mounted installations \leq 5 MWp: 5 MW	
Duration of	14 years	

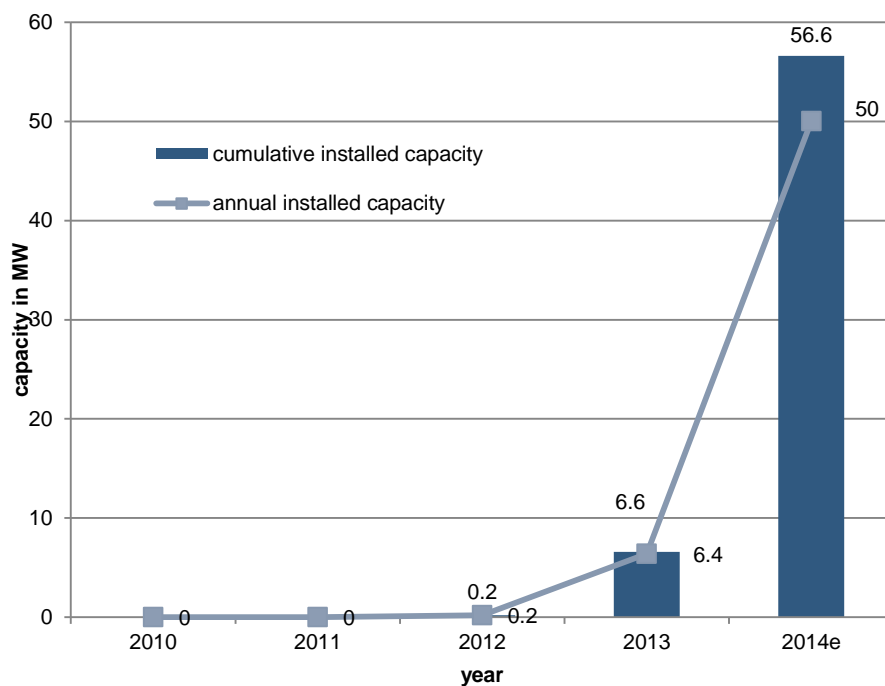
*Annual average exchange rate 2013 from the European Central Bank (ECB): 1 Euro = 7.5786 HRK; **Reference price (OG 116/2013)



With the introduced FIT of 2012, a PV capacity of 30.39 MWp was installed (as of 24th October 2014). Market operator HROTE has closed electricity purchase contracts for further PV capacity of 25.37 MWp in total (as of 24th October 2014).

MARKET DEVELOPMENT AND BARRIERS

Development of installed PV capacity (on-grid)



Sources: EPIA (2013), EPIA (2014a), HROTE (2014a), HROTE (2014b), HROTE (2014c), PV-Tech (2014)



The main barriers in the Croatian PV market

- The 45 MW cap, which had been set by the government, hindered a stronger market growth in 2013.
- The market cap included in the new FIT law of 2014 is set at 12 MW.
- In July 2013, the Ministry of Economics introduced the draft of a “Renewable Energy Action Plan”. It sets a capacity limit for PV systems at 52 MW for 2015-2020. As it is expected that this limit will be reached by the end of 2014, the support for PV beyond 2014 is uncertain.

MARKET NEWS (1/2)

Date	Topic	Source
13/10/2014	<p>Croatia facing unsustainable energy development</p> <p>The European Union is making a radical shift in economic policy by adopting the circular economy model. The re-industrialisation renaissance of the economy will involve consuming less energy and the rational management of natural resources. However, despite these tendencies on the European level, Croatia is going in the opposite direction. A thermal power plant powered by imported coal would become ecologically unacceptable in the EU in less than five years. The Plomin C power plant has been declared as a strategic project this summer by the Croatian government.</p>	The Parliament Magazine
07/10/2014	<p>Wholesale grid parity for solar possible by 2020s, report finds</p> <p>Global energy consultants Pöyry have published a report this week suggesting that the cost of solar and wind power may soon drop to the same level as fossil fuels within a decade, bringing to an end renewable subsidies in Europe. Many southern European countries will achieve wholesale grid parity during the 2020s, including Croatia (2024-2025).</p>	PV-Magazine
14/04/2014	<p>Croatia doubles FiT connected solar capacity in two months</p> <p>At the end of March, an installed solar capacity of 23.8 MW was registered in Croatia under the feed-in tariff (FiT) scheme, according to the Mediterranean country's energy market operator, HROTE.</p> <p>Between February and March 2014 contracts on another 21.03 MW were closed. However, those systems are not yet in operation.</p>	PV-Tech

MARKET NEWS (2/2)

Date	Topic	Source
06/06/2013	<p>Croatia with a delay is banking on renewable energies</p> <p>By mid-2014 Croatia is planning to extend the renewable energy capacity up to 300 MW. In the beginning of 2013 200 MW were installed and connected to the grid. A law concerning the regulation of the electricity market has been adopted. By the end of 2013 a new law on renewables is said to follow. The further expansion of PV systems is controversial, however CHP plants in combination with biomass plants are said to have a future.</p>	GTAI
05/02/2013	<p>Upsolar enters PV markets in Serbia and Croatia with Plan-net Solar</p> <p>Upsolar today announced that the company will now offer its full suite of modules to customers in Serbia and Croatia through an exclusive distribution partnership with Plan-net Solar, an experienced solar services provider for customers across the Balkans. Entry into these regions enables Upsolar to further expand its reach within promising markets throughout Europe.</p>	PV-Magazine
06/11/2012	<p>Croatia increased the PV cap for 2013 (in German)</p> <p>Die kroatische Regierung hat Anfang November 2012 beschlossen, die Deckelung für förderfähige Photovoltaik-Anlagen nach dem kroatischen Einspeisetarifsystem in 2013 von 15 MW auf 45 MW zu erhöhen. Damit könnte bereits im kommenden Jahr das ursprünglich für 2020 vorgesehene Ausbauziel erreicht werden.</p>	www.exportinitiative.de
13/06/2012	<p>Croatia: Drastic reduction of FITs (in German)</p> <p>In Kroatien wird seit Anfang Juni Solarstrom geringer vergütet. Während der Preis für eine durch Photovoltaik-Freiflächenanlagen erzeugte Kilowattstunde zuvor noch bei 0.52 Euro/kWh lag, fiel dieser seit Anfang des Monats auf nur noch 0.15 Euro/kWh. Weniger drastisch sind die Kürzungen für Solarstrom aus Aufdachanlagen, der nunmehr mit 0.35 Euro/kWh bei einer Peak-Leistung von bis zu zehn kWp und 0.22 Euro/kWh für zehn bis 30 kWp Leistung vergütet wird. Gleichzeitig verlängerte die Regierung die Laufzeit der Einspeisevergütung von zwölf auf 14 Jahre. Zudem wird ein Bonus von 15 Prozent auf den geltenden Einspeisetarif gewährt, wenn für die Energieprojekte bestimmte Local-Content-Bedingungen eingehalten wurden.</p>	www.exportinitiative.de

CONTACT INFORMATION

Category	Name	Website
Ministry of Energy and Environment	Ministry of Environmental and Nature Protection (MZOIP)	www.mzoip.hr/default.aspx
Ministry of Economics	Croatian Ministry of Economy (MINGO)	www.mingo.hr
Ministry of Finance	Croatian Ministry of Finance (MFIN)	www.mfin.hr
German-Croatian Chamber of Commerce	Njemačko-hrvatska industrijska i trgovinska komora (AHK)	www.kroatien.ahk.de
Solar Industry Association	Croatian Solar Energy Association (HSSE)	www.hsse.hr/index_en.html
Energy Association	Croatian Energy Association (HED)	www.hed.hr
National Renewable Energy Research Association	Croatian Center of Renewable Energy Sources (CCRES)	www.solarserdar.blogspot.de
Energy Market Operator	Hrvatski Operator Tržišta Energije (HROTE)	www.hrote.hr

CONTACT INFORMATION

Category	Name	Website
National Electricity Utility	Hrvatska Elektroprivreda (HEP Group)	www.hep.hr/hep/en/group/default.aspx
National Transmission Grid Operator	Croatian Energy Regulatory Agency (HERA)	www.hera.hr
National Development Bank for Financing Renewable and Solar Energy Projects	Central Finance and Contracting Agency (CFCA) Croatian Bank for Reconstruction and Development	www.safu.hr/en www.hbor.hr/hrvatski

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