

*„Innowacje w procedurach transferu technologii: Nauka-Przemysł”
Projekt realizowany w ramach programu DIALOG 0047/2016*

Raport

IV SOLAR FORUM

Tenders for solar projects: what's next for the PV sector?

Madryt 21 - 22 Listopad, 2017

Konstanty Marszałek

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Program IV FORUM

21 Listopad

8:15h–9:00h Registration

9:00h–9:30h Opening Mr. Jorge Barredo, UNEF, President

9:30h–9:45h Current situation of PV in the Winter Package

Ms. Paula Abreu, Unity, Renewables and CCS Politics, European Commission

9:45h–10:45h How will the EU directives affect the profitability of PV installations?

MEPs of the main Spanish political parties debate on the key elements that should be taken into consideration when integrating the principles of the Clean Energy Package into the national legislation.

Mr. José Blanco, Member of the Group of the Progressive Alliance of Socialists and Democrats, European Parliament

Mr. José Inácio Faria, Member of the Popular European Party Group, European

Parliament **Mr. Xabier Benito**, Podemos MEP, member of the Committee of Industry, Research and Energy, European Parliament

10:45h–11:30h COFFEE BREAK

11:30h–12:30h What strategy should PV companies adopt to be competitive in the médium term in the PV market?

Leaders of some of the key industry companies debate on their vision of the future market.

Mr. Íñigo Olaguibel, CEO, Vela Energy

Mr. José Benjumea, Founder Member and CEO, Powen

Mr. José Manuel Olea, Chief Financial Officer, Renovalia Energy, S.A.

Mr. Omar González, Founder and CEO, Exiom Group

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12:30h–13:30h Which power purchase and sale models are viable in the Spanish market?

Key representatives of the sector debate on the development of PPAs and merchant power agreements.

Moderator: Mr. Juan Cruz, El Confidencial

Mr. Jose María Pernía, Account Manager for Major Accounts (construction & Energy Industry), Aon Risk Solutions

Mr. David Díez, Partner, Watson, Farley & Williams Spain S.L.U

Mrs. Angie Soto, Manager of Renewable Energy Producer, Nexus Energía

Mr. Jorge Alvarez, Head of Consultancy, Enertis

Mr. Luis Castro, Partner, Osborne Clarke

13:30h–15:00h LUNCH BREAK

15:00h–15:30h The self-consumption market in the United States of America

Mr. Todd Foley, Senior Vice President for Policy and Government Relations, American Council On Renewable Energy (ACORE)

15:30h–16:30h What are the opportunities and challenges of the international market?

Cooperation and business opportunities for PV companies in Asia, one of the most vibrant markets, are presented.

Moderator: Mr. Eladio Meizosor, Cadena Ser

Mrs. Qun Wang, Director, Asian Photovoltaic Industry Association (APVIA)

Mr. Christian Benöhr Riveros, Head of Sales South of Europe, Sungrow

Mr. Pablo Cuesta, CEO, Praxia Energy

Mr. Stanislaw M. Pietruszko, President, PV Poland

Mr. Pranav R. Mehta, President, National Solar Energy Federation of India (NSEFI)

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16:30h–17:30h What role will PV play in the balancing market?

We analyze how large-scale energy storage can contribute to increase PV plants income.

Moderator: Ms. Concha Raso, El Economista Energía

Mr. Miguel Rafael Duvison, General Manager of System Operation Division, Red Eléctrica de España

Mr. Juan Fraga, International Business Manager, WYNNERTECH

Ms. Mónica Ruiz, Sales & Marketing Director, Gnera Energía.

President of OMIE (pc)

17:30h–18:30h What role can PV play in the desirable energy model for Spain?

We analyze the potential development of self-consumption market in the residential, industrial and services areas.

Moderator: Ms. Ainhoa Murga, El Español

Mr. Fernando Ferrando Vitales, Vice – president, Fundación Renovables

Mr. Carlos Martínez Camarero, Confederal Secretariat for Occupational Health and Environment Member, CCOO

Mr. Javier Fernández – Font Pérez, UNEF Delegate in Asturias

18:30h–22:00h Soltec Solar Cocktail at the SkyNight Bar, top floor. A courtesy of Soltec Solar.

22 Listopad

8:15h–9:00h Registration

9:00h–10:00h A perspective on the international development of PV

Moderator: Ms. Catalina Arévalo, EFE

Mr. Paolo Frankl, Head of Renewable Energy Division, Energy International Agency

Ms. Valvanera Ulargui, Director, Spanish Office for Climate Change

Ms. Cristina Narbona, President, Spanish Socialist Workers Party (PSOE)

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10:00h–11:00h What sectors offer the most interesting opportunities for self-consumption?

Representatives of the society debate on the energy transition from the perspectives of job creation, economy development and R&D.

Moderator: Mr. Ramón Roca, El Periódico de la Energía

Mr. Miguel Ángel Torres, President, Spanish Wine Federation. President, Bodegas

Torres Mr. Piet Holtrop, Lawyer, Partner, Holtrop S.L.P. Transaction & Business Law **Mr. Juan Francisco González**, Project Manager, Aros Solar Technology

Mr. Juan Antonio Caballero Sánchez, VP Maintenance & Engineering, NH Hotel Group

11:00h–11:45h COFFEE BREAK

11:45h–12:45h What are the latest and most relevant technological innovations in the photovoltaic sector?

In cooperation with FOTOPLAT, the Spanish Photovoltaic Technology Platform, we will review the roadmap of the PV industry in relation to cells, modules, trackers and inverters in a 5-year scenario.

Moderator: Ms. Puri Ortiz, FuturEnergy

Mr. Raúl Morales, CEO, Soltec

Ms. Ana Rosa Lagunas, Director of Photovoltaic Solar Energy Department, CENER

Mr. Iñaki Legarda-Ereño, Director Solar Business, Mondragon Assembly

Mr. Roberto González, Director R&D Department, Ingeteam Power Technology

Mr. Eduardo Román PhD., Responsible for Photovoltaic Solar Energy/Solar Area, Tecnalia

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12:45h–13:45h When will energy independence be achieved?

Technological solutions for the empowerment of consumers through energy storage are presented

Moderator: Mr. Santiago Carcar, La Información

Ms. Assumpta Farran i Poca, Director, ICAEN

Mr. Jorge Hungría, Technical Director, SOLARWATT SPAIN

Mr. Jon Asin, President, AEDIVE

Mr. Carlos Sellas, Country Manager, KOSTAL Solar Electric Ibérica

13:45h–15:15h Lunch break

15:15h–16:15h Which are the most successful projects in the off-grid market?

Remarkable off-grid projects based on PV technology, in Spain as well as in other markets, are presented.

Moderator: Ms. Pepa Mosquera, Energías Renovables

Mr. Mahama Kappiah, Executive Director, ECREE

Mr. Ernesto Macías, President, Alliance for Rural Electrification (ARE)

Mr. Gonzalo Piernavieja, CTO, Canary Islands Institute of Technology (ITC)

Mr. Xavier Vallvé, Managing Partner, Trama TecnoAmbiental

Mr. Igor Cantero, Director of R&D, CEGASA Portable Energy

16:15h–17:15h Which measures are being carried out by public institutions to promote self-consumption?

Representatives of Spanish institutions present the initiatives they are carrying out to foster the development of self-consumption.

Mr. Manuel Ayerdi, Vicepresident of Economic Development, Government of Navarra*

Mr. Juan Hernández, Regional Minister of Employment, Universities and Enterprise, Region of Murcia

Ms. M^a de los Ángeles, Vicepresident, Deputy of Granada*

Ms. María Sánchez, Environment and Sustainability City Councilor, Valladolid City Council

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17:15h–18:15h Operation and Maintenance: how can plant management contribute to make the PV more competitive?

We analyze the impact of the equipment substitution, the digitalization of processes and the development of smart-grids on the cost reduction of PV plants.

Moderator: Mr. Javier Monforte, Energética XXI

Ms. Marta Mieres Bárcena, Industrial Engineer, Phoenix Contact, S.A.

Mr. Xavier Martínez-Falero, Technical Manager, Gildemeister Energy Solutions

Mr. Miguel Ángel Gómez, Local Segment Manager Renewables, Weidmüller, S.A.

Mr. Owen Rooney, Senior Director, Mercatus, Inc.

18:15h–18:30h Closing and conclusions

Mr. José Donoso, UNEF General Manager

Obrady IV FORO SOLAR o tworzył Przewodniczący UNEF Jorge Barredo.

Pierwsza wystąpiła przedstawicielka Komisji Europejskiej ds Jakości Energii Odnawialnej i Polityki CCS przedstawiając bieżącą sytuację fotowoltaiki w Europie. Po tym wystąpieniu rozpoczął się panel dyskusyjny pt.

Jak Dyrektywy EU wpływają na rentowność instalacji PV.

W dyskusji udział brali:

Jose Blanco – członek Grupy Postępowego Związku Socjalistów i Demokratów z Parlamentu Europejskiego

Jose Inacio Faria – członek Europejskiej Frakcji Ludowej Parlamentu Europejskiego

Xabier Benito – członek Komitetu Przemysłowego Badan i Energii Parlamentu europejskiego.

Należy zwrócić uwagę, że na Forum organizowanym przez Hiszpańską Unię Fotowoltaiki UNEF brali udział przedstawiciele Komisji Europejskiej, Parlamentu Europejskiego, ministerstw, władz najważniejszych regionów Hiszpanii jak i prezesi czy przedstawiciele hiszpańskich i europejskich korporacji zajmujących się fotowoltaiką i energetyką. W Forum uczestniczyło ponad 600 osób i kilkudziesięciu wystawców.

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Fot.1. Uczestnicy pierwszego panelu IV Forum Fotowoltaiki



Fot.2. Uczestnicy Panelu o przyszłości fotowoltaiki w trakcie IV Forum Fotowoltaiki w Madrycie

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Fot.3. Instalacja fotowoltaiczna hiszpańskiej firmy na pustyni Atacama w Chile.

Jednym z istotnych problemów omawianych w trakcie IV Forum Fotowoltaiki było stworzenie warunków dla hiszpańskich i europejskich firm do ekspansji na rynki południowoamerykański i afrykański. Rynek azjatycki przedstawiony był jako nieosiągalny dla firm europejskich ze względu na hegemonie dostawców chińskich w tym rejonie.

Inną ciekawym obszarem dyskusji był transport pojazdów z napędem elektrycznym i to zarówno lądowy jak i wodny. Powietrzny mimo spektakularnego przelotu dookoła świata jest zbyt odległy od powszechnego zastosowania aby prowadzić rozsądne dyskusje oparte na konkretnych planach i rachunku ekonomicznym połączonym z aspektami środowiskowymi tzn ograniczeniem emisji CO₂.

W przedstawionym Raporcie UNEF za 2017 podano zainstalowane moce w największych krajach Europy:

1. Niemcy	42 GW	37,7%
2. Włochy	19,9GW	19,9%
3. W.Brytania	12,7GW	11,1%

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4. Francja	7GW	7%
5. Hiszpania	5,6GW	4,4%

Co razem daje 80% zainstalowanej mocy w elektrowniach fotowoltaicznych w Europie.

IV Solar Forum Roadways future of photovoltaics after auction

- **The Secretary of State for Energy, Daniel Navia has announced the celebration of the new renewables auction in the Canary and Balearic Islands in the first quarter of 2018.**
- **The European Commission highlights the 50% growth of PV above and other renewable target of 27% of total energy consumption by 2030.**
- **Companies have indicated their willingness to work market and the key role of legal certainty to improve the integration of photovoltaic energy systems.**
- **The forum meets today and tomorrow, 80 speakers and five hundred participants from eleven different nationalities.**

Madrid, November 21, 2017 . The Secretary of State for Energy, Daniel Navia and the president of UNEF, Jorge Barredo, have been responsible for inaugurating today the IV Forum Solar, in which responsible companies, national and international organizations, legal experts and regional governments discussed during two days, the situation of the sector and its future prospects. The Forum, which ends tomorrow, will bring together 500 participants from eleven different countries: Germany, Argentina, China, Spain, France, India, Italy, Lebanon, Netherlands, Poland and Portugal.

The Secretary of State for Energy, Daniel Navia , stressed the high development of photovoltaic technology "already competes without support, or reduced support" and the

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critical role it will play in the future energy system. He also stressed the importance of regulation that reconciles the targets set in renewable welfare of society and advocated for looking to the future and leave the past debates: "We have the unique opportunity to redirect and reactivate the agenda of cooperation" between the administration and industry.

the government is "open to the elimination of administrative obstacles" in the consumption and opening opportunities for collaboration as Navia.

Finally, the Secretary of State has referred to the new renewables auction to be held in the Canary Islands and the Balearic Islands in the first quarter of 2018 and highlighted the efforts of the administration to the regulatory timetable for the development and implementation 4,000 MW of photovoltaic energy obtained in the last auction as quick as possible.

For his part, the **president of UNEF, Jorge Barredo** , has reviewed some of the most important milestones of photovoltaics in the past year. Barredo has highlighted the high competitiveness of Spanish companies and the leadership role they are playing in international markets, stating that this success represents the hallmark of our industry.

He also regretted the Government's intention to reduce the reasonable profitability of renewable and negative for owners of photovoltaic installations consequences. Finally, UNEF president has again defended a liberalized consumption, no economic or administrative barriers as an essential element in the fight against climate change.

At European level, the Head of **Unit Renewables and CCS policy of the European Commission, Paula Abreu**,It has highlighted the growth of photovoltaics 50% above the rest of renewable energies as well as the important role of this source in the energy transition. The Commission, according to Abreu, has set the goal of getting at least 27% of the energy consumed in 2030 is from renewable sources. In this regard, the institution is

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working for member states of the EU comply at least with the 2020 targets, and stressed the need to prepare and develop their own national plans. In this regard noted the importance of increasing investments, which are very prominent in the case of Britain and Germany, and the prominent role of consumption.

By the European Parliament, the **MEP of the Progressive Alliance of Socialists and Democrats, José Blanco**, has announced that next Tuesday a consensus proposal by almost all political groups will be presented in Parliament, to extend the objectives European Commission and set a 35% renewable energy by 2030. White has advocated strengthen legal certainty in the sector to achieve a stable legal framework, and has asked that the consumption is promoted beyond the provisions of the European Commission, to prevent "tax the sun" by establishing criteria to compensate those autoconsumidores which discharge their surplus to the network.

On the first day, representatives of the companies have indicated their willingness to work to market with appropriate regulation, and recalled that legal certainty is key to reducing the cost of capital and improve the integration of photovoltaic energy systems .

The experts have claimed that reality imposes itself to regulation, because the competitiveness achieved by the photovoltaic future is your guarantee. With this respect, the PPAs and derived products are presented as a viable alternative to auctions.

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Presentation of the Report UNEF 2017: Photovoltaic sector generates more than 19,000 jobs

- To avoid increasing the cost of electricity is necessary to adopt an RDL to abolish economic and administrative barriers to the development of consumption.
- Photovoltaic sector's contribution to GDP is around 0.3%
- Photovoltaic sector companies invested in R + D + i 1.6% of its turnover, twice the national average set at 0.89%.
- In 2017, 135 MW were installed photovoltaic power, compared to 55 MW in 2016.
- Photovoltaic sector companies maintain their position on the instability of the regulatory framework in Spain and ask the Government measures contributing to the development of their potential to benefit the whole economy, the autoconsumidores, consumers in general and climate change.

Madrid, As part of the presentation of its annual report in the photovoltaic sector, the Spanish Photovoltaic Union (UNEF) has presented the main figures evolution of the photovoltaic sector last year 2017 in Spain and show the turning point and turning point in the sector.

This turnaround has been determined among others by awarding **3.9 GW** of new power auction held in July 2017; technological competitiveness of the sector and the progressive lowering of production costs; the objectives of penetration of renewable energies in the energy mix defined in the legal framework of the European Union, today embodied in the new European Directive on Renewable Energy; and increasing awareness of the development of consumption as an effective and undeniable energy saving and emission reduction measure CO₂.

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The photovoltaic sector in Spain

The data obtained from PRETOR and MINETAD and sources consulted by UNEF show growth of **145%** in photovoltaic power installation, marking the highest level since 2012. The **135 MW** installed (55 MW 2016) are, however, far from the level of the surrounding countries. In Europe, Spain occupies the 5th place, after France, photovoltaic power accumulated According to the International Energy Agency. However, 31 March 2018 there are around **30 GW** of photovoltaic solar power pipeline, which is expected that a high percentage translates into operational installed capacity in the coming years.

The main macroeconomic data of the photovoltaic sector in 2017 show substantial growth compared to 2016 and broadly increase their weight in the total economy. The total contribution of all photovoltaic sector GDP is around 0.3% (**3,935 M € in 2017** and **3,781 M € in 2016**); PV industry exports reached the figure of **938 M € (919 M € in 2016)** and it is estimated that more than 70 companies associated with UNEF are active in 72 countries; the total footprint of the number of jobs shed more than 19,000 jobs in 2017 (**18,377 employees in 2016**); spending by Spanish companies in R + D + i was **60 M € in 2016 and 2.5% in 2017** more, representing 1.6% of its turnover, double the Spanish average stood at around 0.89%; and its activity is a reduction of emissions estimated at 3,631 ktCO₂.

Within the need to provide the stability and necessary regulation for development sector, legal framework, in line with the international framework in generation and sustained investment, UNEF requests the Government measures to: halt the legal uncertainty through stability in return for the old and awarded by auction during its lifetime photovoltaic projects; in the field of energy consumption, the elimination of charges and tolls on the self-consumed energy; simplification, administrative certainty and regulation of collective consumption; updating and simplifying access and connection to the network; and call for new auctions in

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Canary and Balearic Islands.

In this sense, the Spanish Association Photovoltaics (UNEF), which represents more than 85% of the industry calls for the creation of a Law on Energy Transition and Climate Change in line with commitments in environmental matters set out in the Paris Agreement to facilitate and drive a path of sustained growth, developing their potential and encouraging investment for renewable energy; the establishment of a new system market for renewable energy; a new environmental tax; the restructuring of the electricity tariff; promoting electrification and support for the internationalization of the sector, particularly SMEs.

The sector grows in Europe

On the European continent, the European photovoltaic solar sector is preparing for its next phase of growth after years of decline. Thus in Europe he added 9.2 GW 2017, an increase of 30% compared to 7 GW installed in 2016, primarily driven by growth in Turkey.

Although 21 of the 28 countries of the European Union added more power in 2017 than in the previous year, as a whole the difference with the previous year was minimal (5.91 GW in 2017 compared to 5.89 GW in 2016). This was mainly due to significant cuts installation in the UK, adding half the power than in the previous year. However, the British Isles are, along with France and the Netherlands, the only country added more than 500 MW to its photovoltaic park. Considering the total installed power, the outlook also remains similar to the previous year, with Germany and Italy operate more than half of the total power generation of photovoltaic solar energy in Europe: 37.7% (42 GW) and a 17% (19,7 GW), respectively. UK, meanwhile, ranks third with 11.1% and 12.7 GW, while France holds the fourth place (7% and 8 GW) and Spain the fifth (4.9% and 5.6 GW), despite having less than 750 MW added in the last 6 years.

UNEF REPORT 2017

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Powyższa plansza pokazuje głównych organizatorów i sponsorów IV Forum Fotowoltaiki UNEF w Madrycie. Daje to kolejny obraz jak szeroko organy rządowe, przemysł, instytucje badawcze i media interesują się tą istotną i silnie rozwijającą się dziedziną gospodarki.