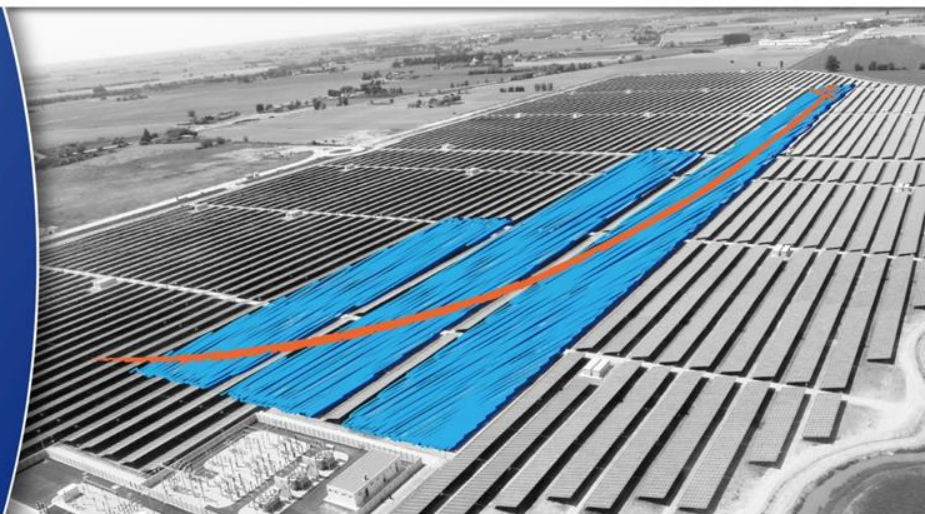


EU-wide solar PV business models: guidelines for implementation (D4.4)



Sonia Dunlop, Policy Adviser, SolarPower Europe

PV Financing project meeting, Brussels, 17-18 October 2016



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646554



EU-wide solar PV business models: guidelines for implementation

A guide for investors on how to put into place the leading business models and financing schemes for solar PV across the EU.

PV FINANCING Project

September 2016

Deliverable 4.4 – Public – EU Implementation Guidelines

Draft v0.94

European Union

Authors

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Disclaimer: SolarPower Europe is not responsible for the relevance, accuracy or comprehensiveness of the information provided by these guidelines and will not be held liable for any direct or indirect damage incurred by the use of the information provided.

Application segments



Single family
residential
homes



Multi-family
residential
homes

Public and
educational
buildings

Shopping malls
and office
buildings

Business parks
and industrial
buildings

Ground
mounted solar
farms

Sources of finance

Self funding

Debt

Equity

Mezzanine
financing

Leasing

Crowdfunding

Sources of finance

Self funding

Debt

Equity

Mezzanine
financing

Leasing

Crowdfunding

Sources of finance



Sources of finance

Self funding

Debt

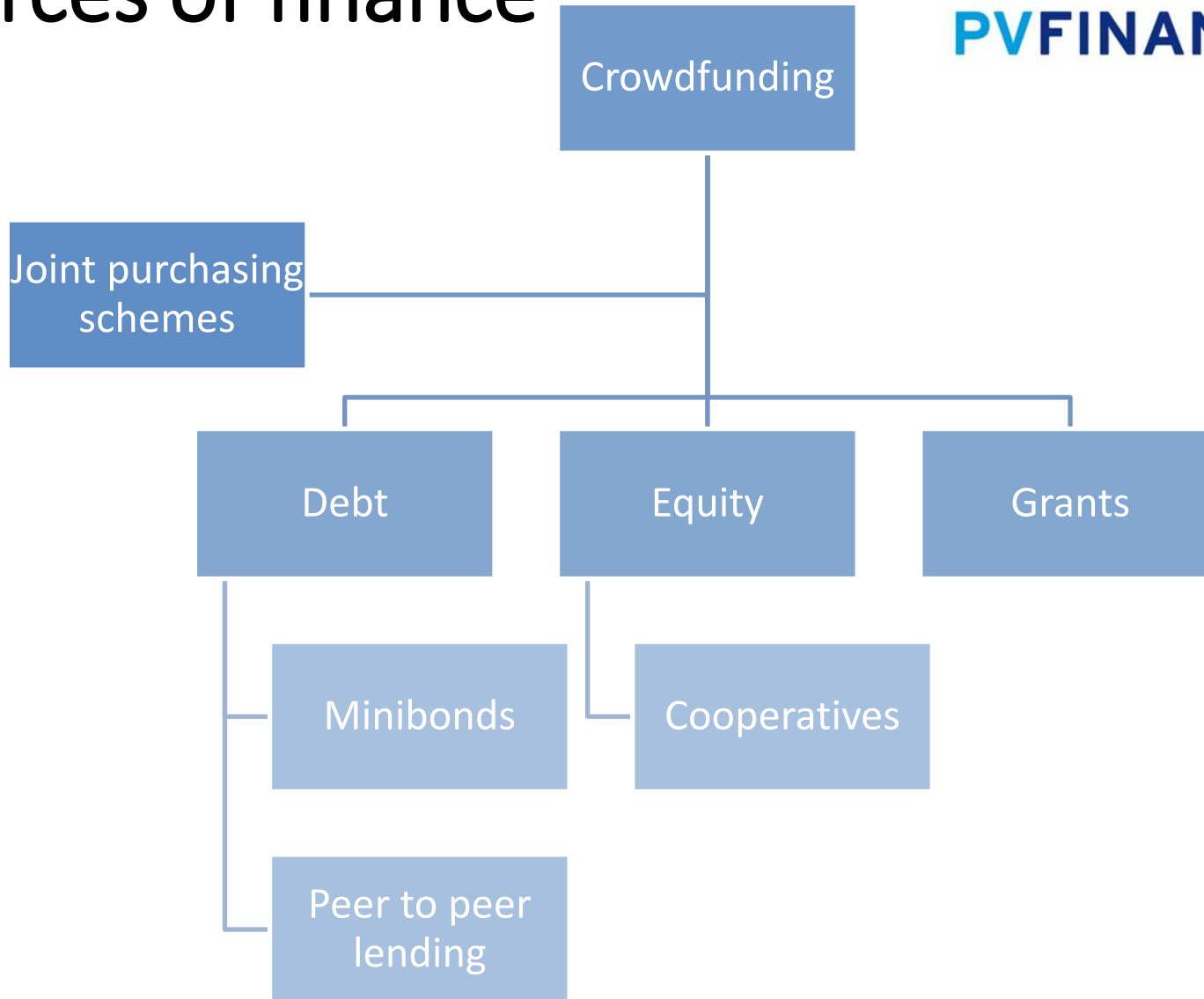
Equity

Mezzanine
financing

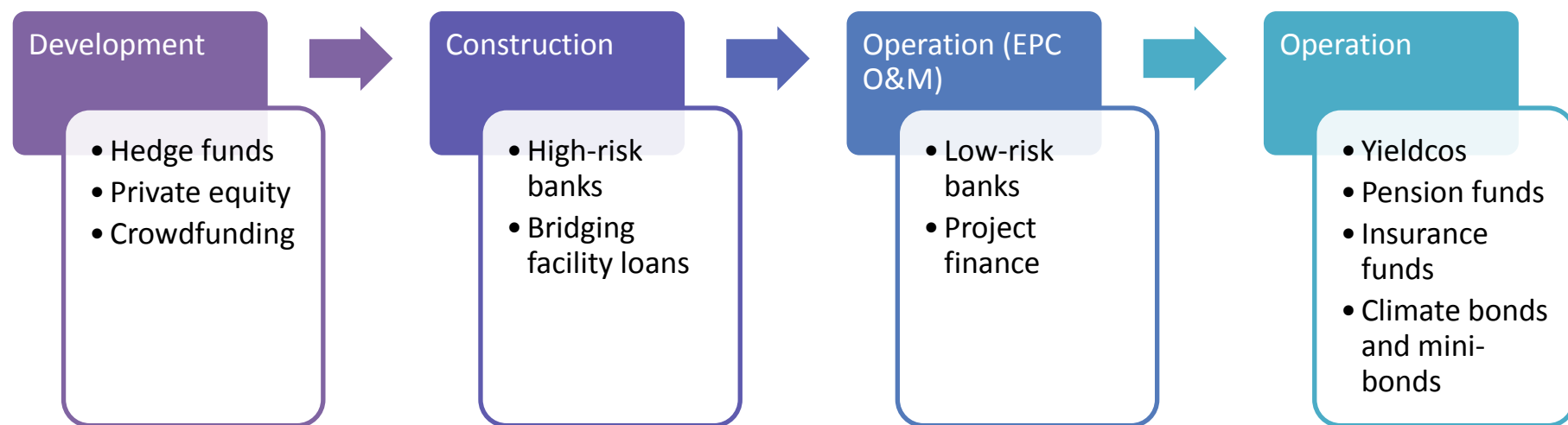
Leasing

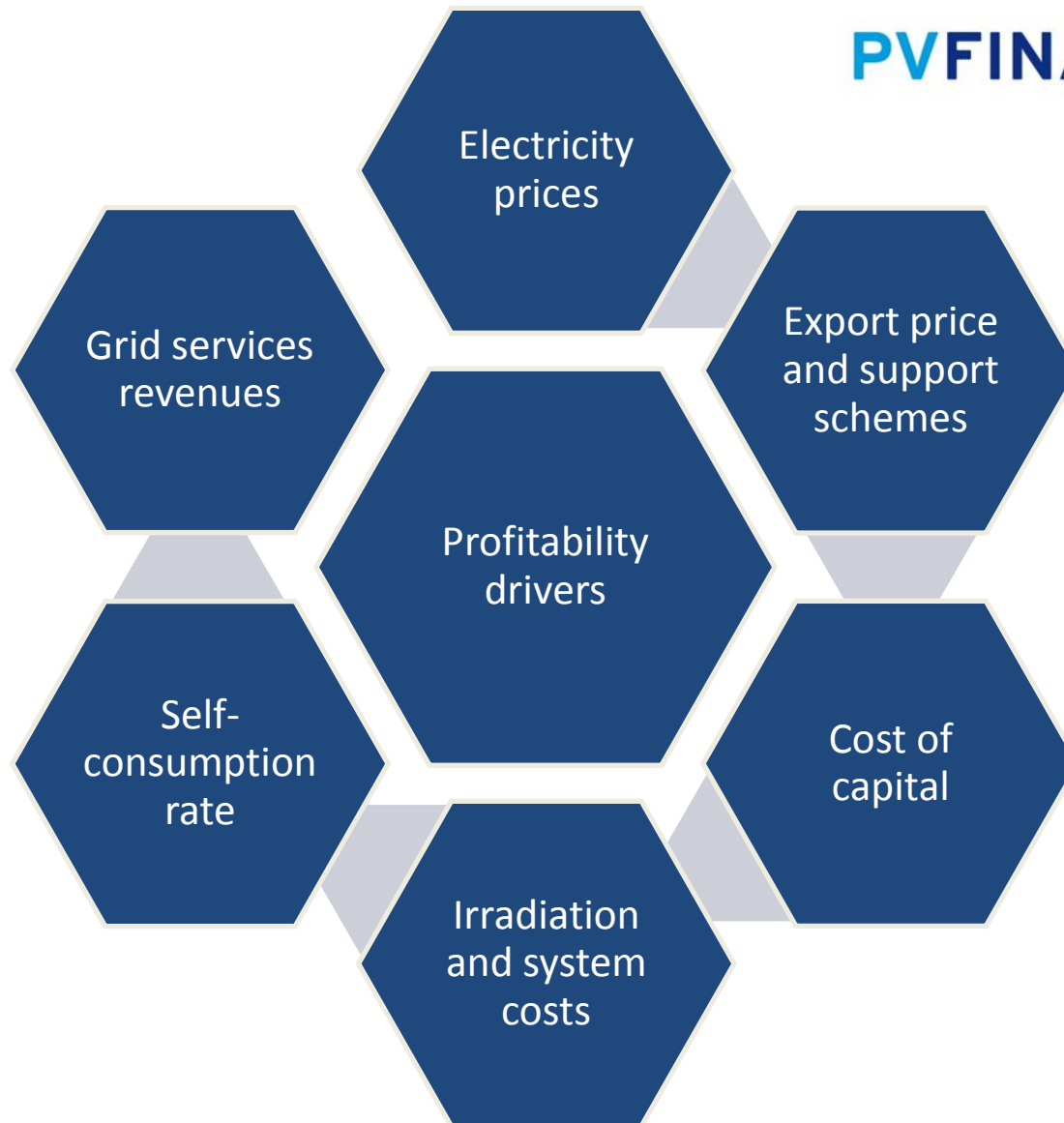
Crowdfunding

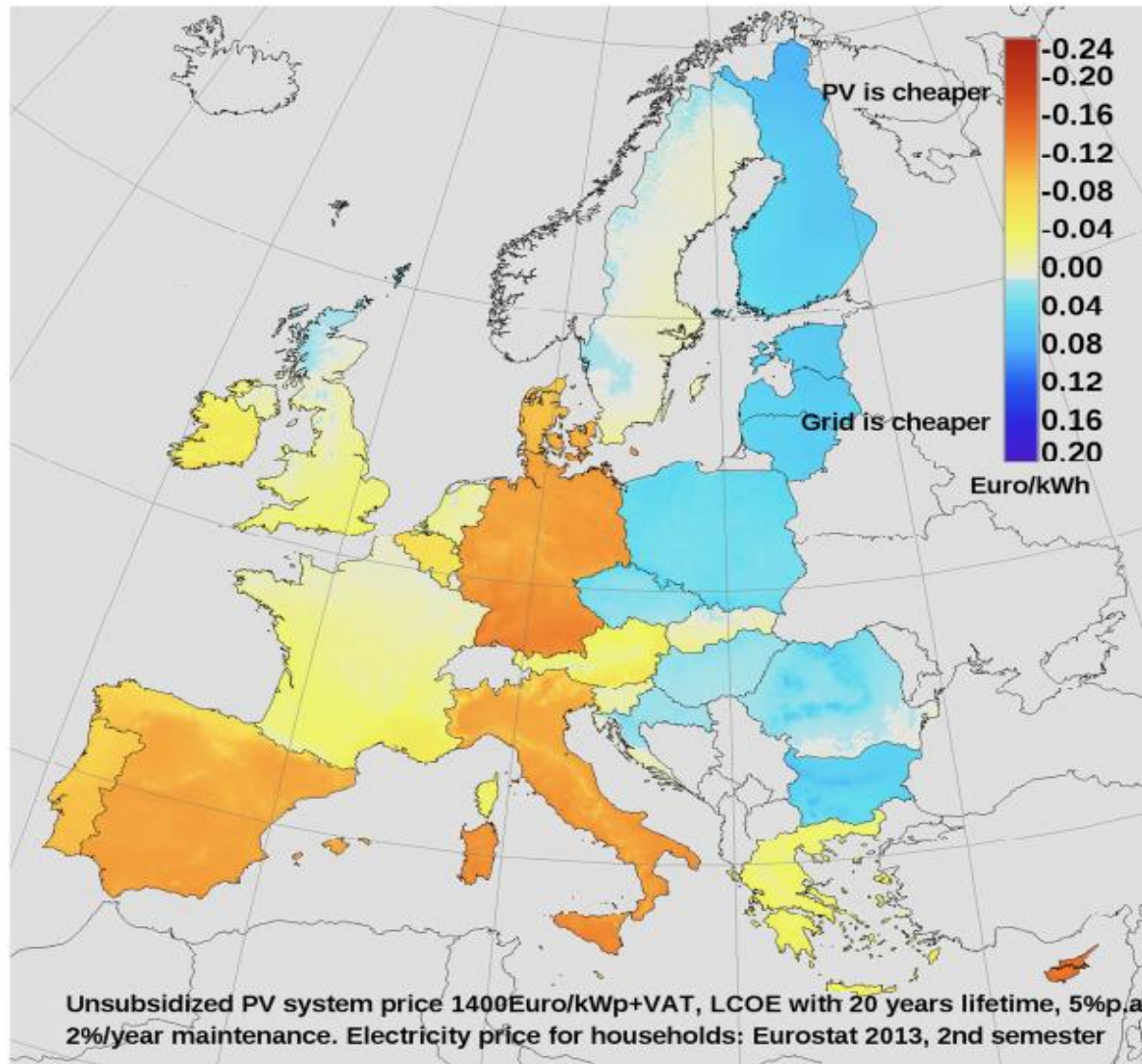
Sources of finance



Ground-mount: financing at different stages

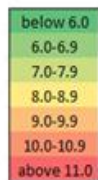




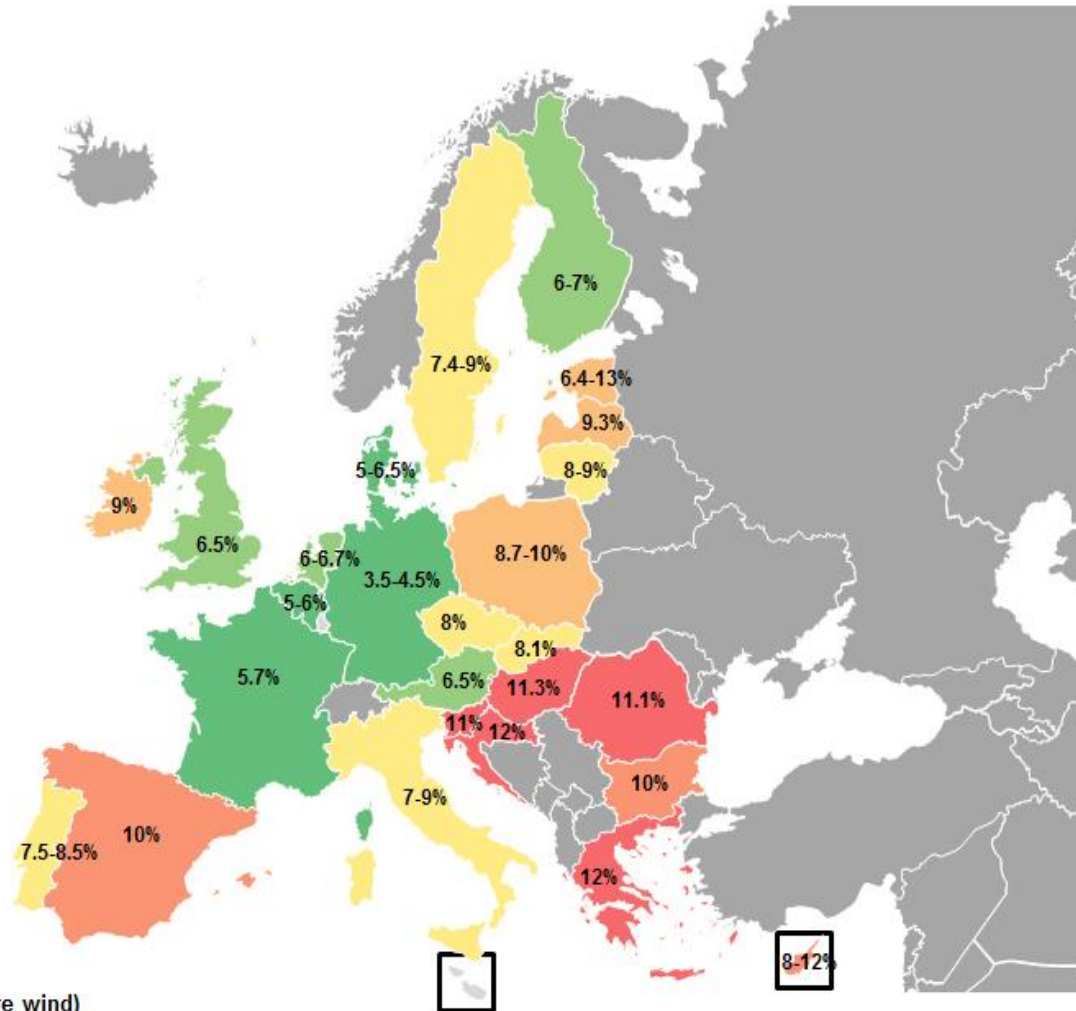




DiaCore



WACC across the EU-28
(interview results for onshore wind)



Barriers

Bankruptcy or
re-location

Taxes and grid
charges

Political risk

Legal costs

Risk of
curtailment

Quality issues

Minimum
Investment
Limits

Due diligence

Replaceable
power
consumers

Direct grid
connection
and wholesale
PPA

Watertight
contract with
take or pay
clause

Lift and shift
option

Government
safety net

Overcoming
bankruptcy and
re-location

Template legal contracts

**Fotovoltaik Elektrik Arzı ve Örnek Elektrik
faturası için Örnek Elektrik Arzı Sözleşmesi**

**Uluslararası Güneş Enerjisi Topluluğu, Türkiye
Bölümü Günder'in yayımıdır.**

BUSINESS MODELS

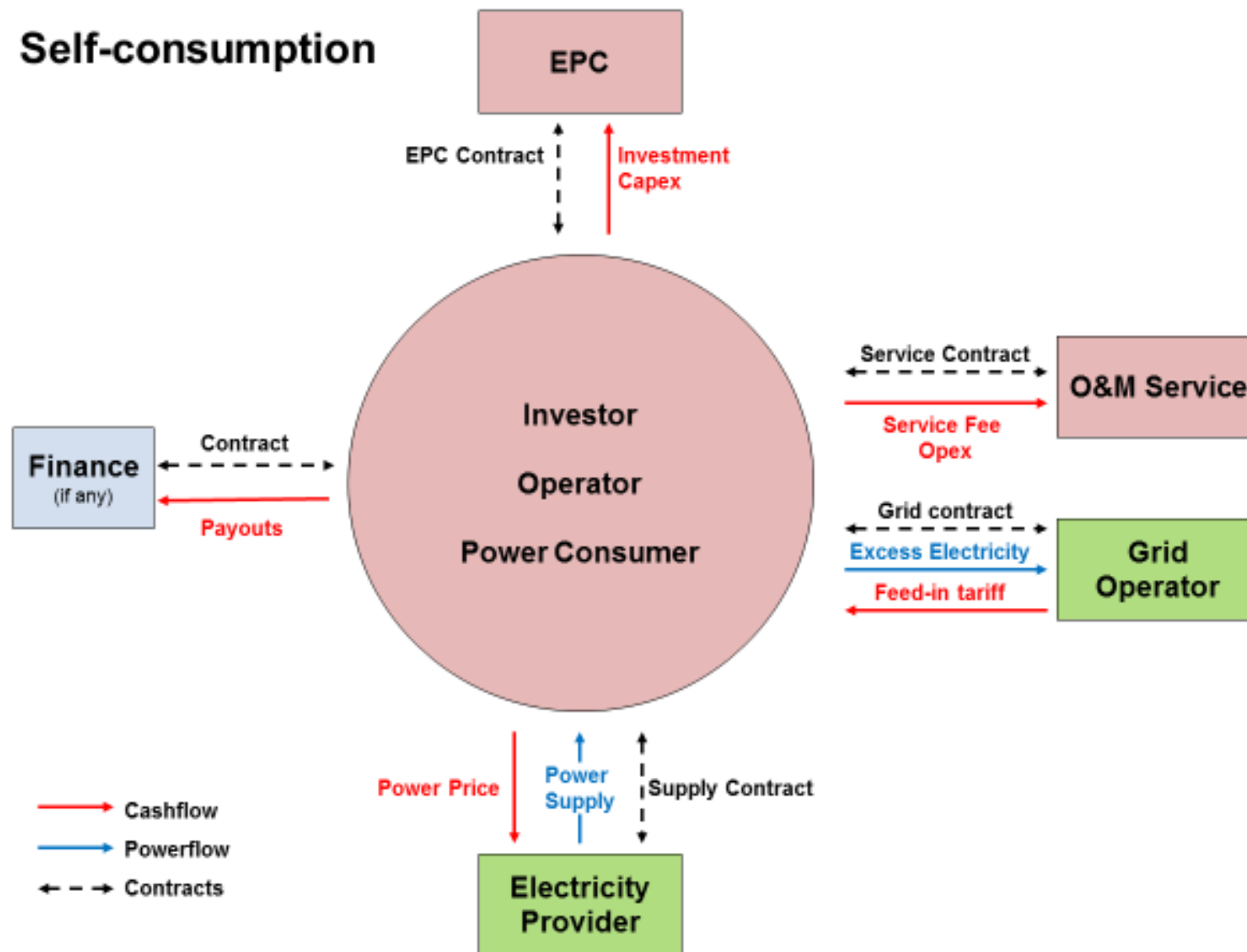
Self consumption

Power Purchase Agreements (PPAs)

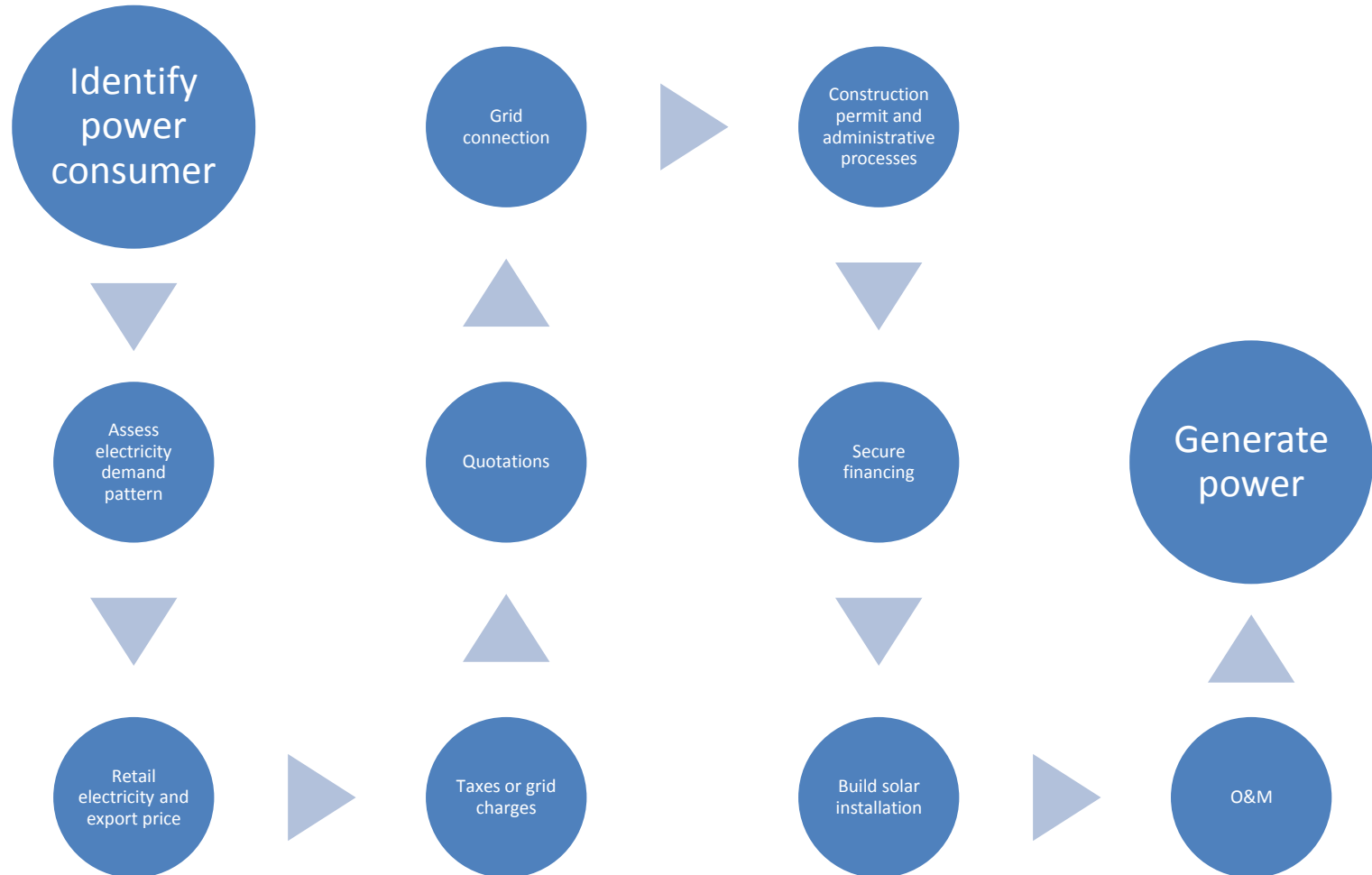
Cooperatives

Aggregators/Virtual Power Plants

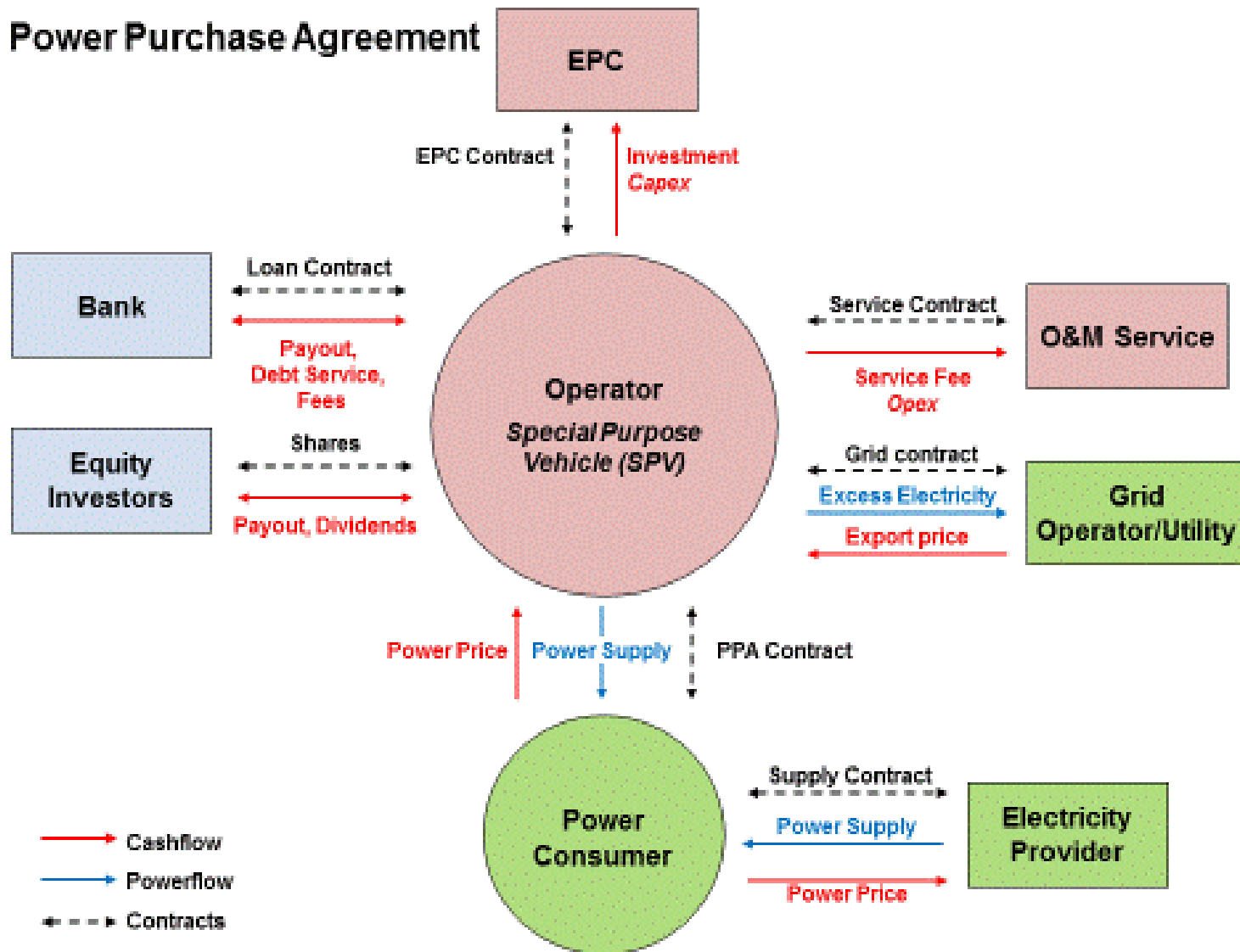
Self-consumption



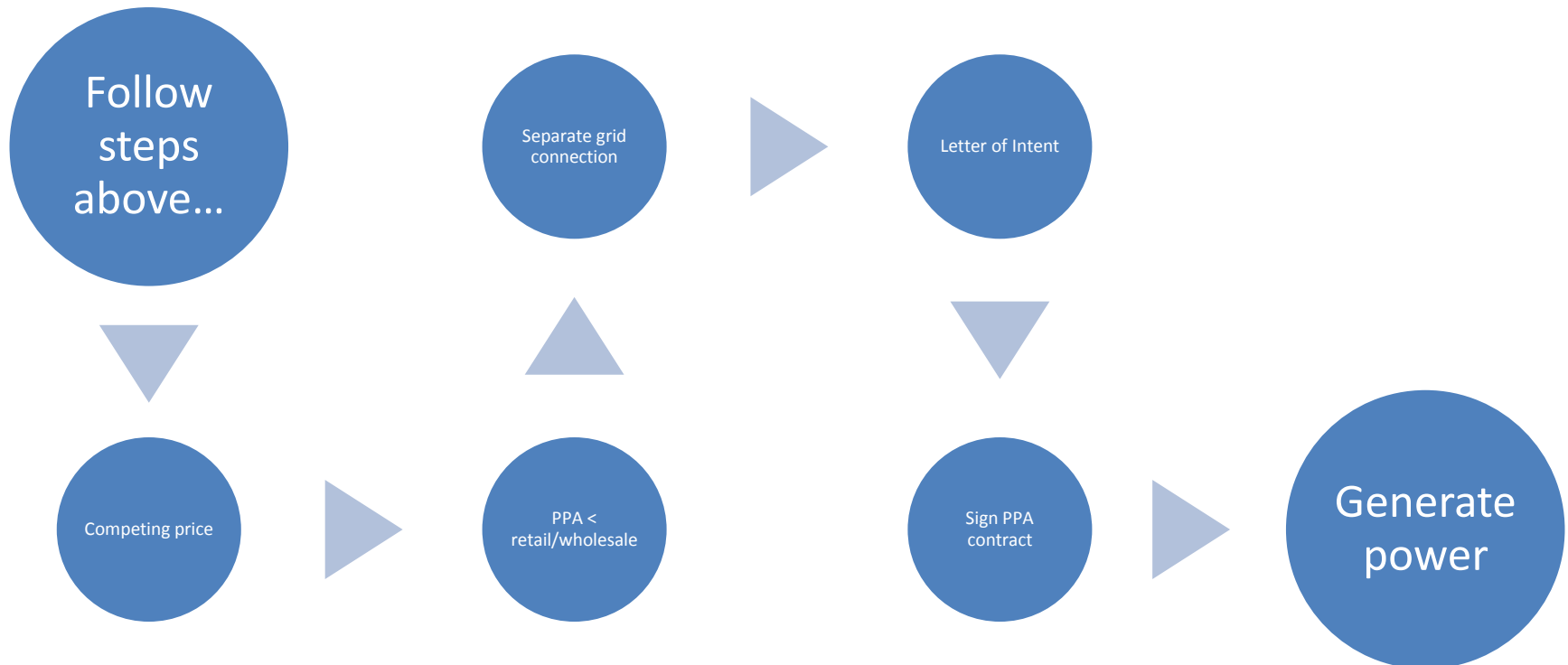
Steps for self-consumption

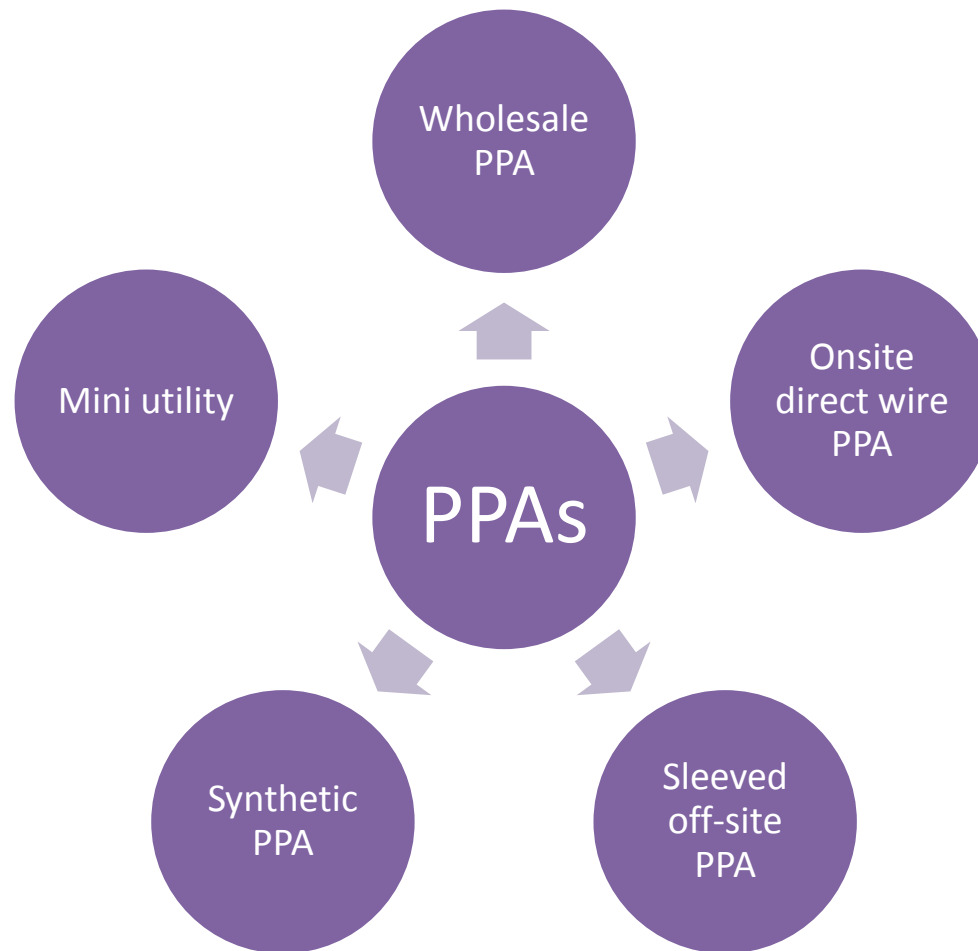


Power Purchase Agreement

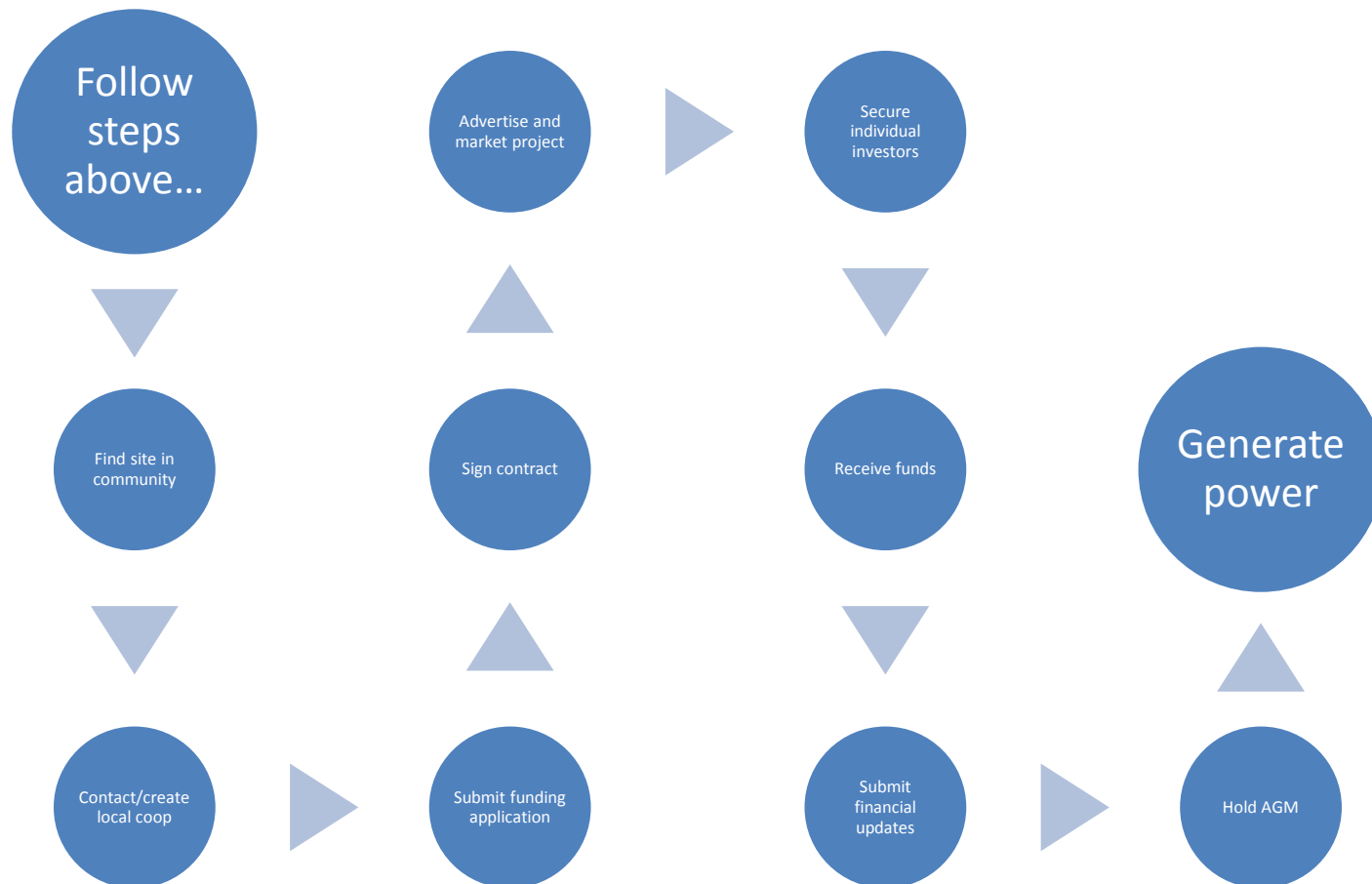


Steps for PPAs

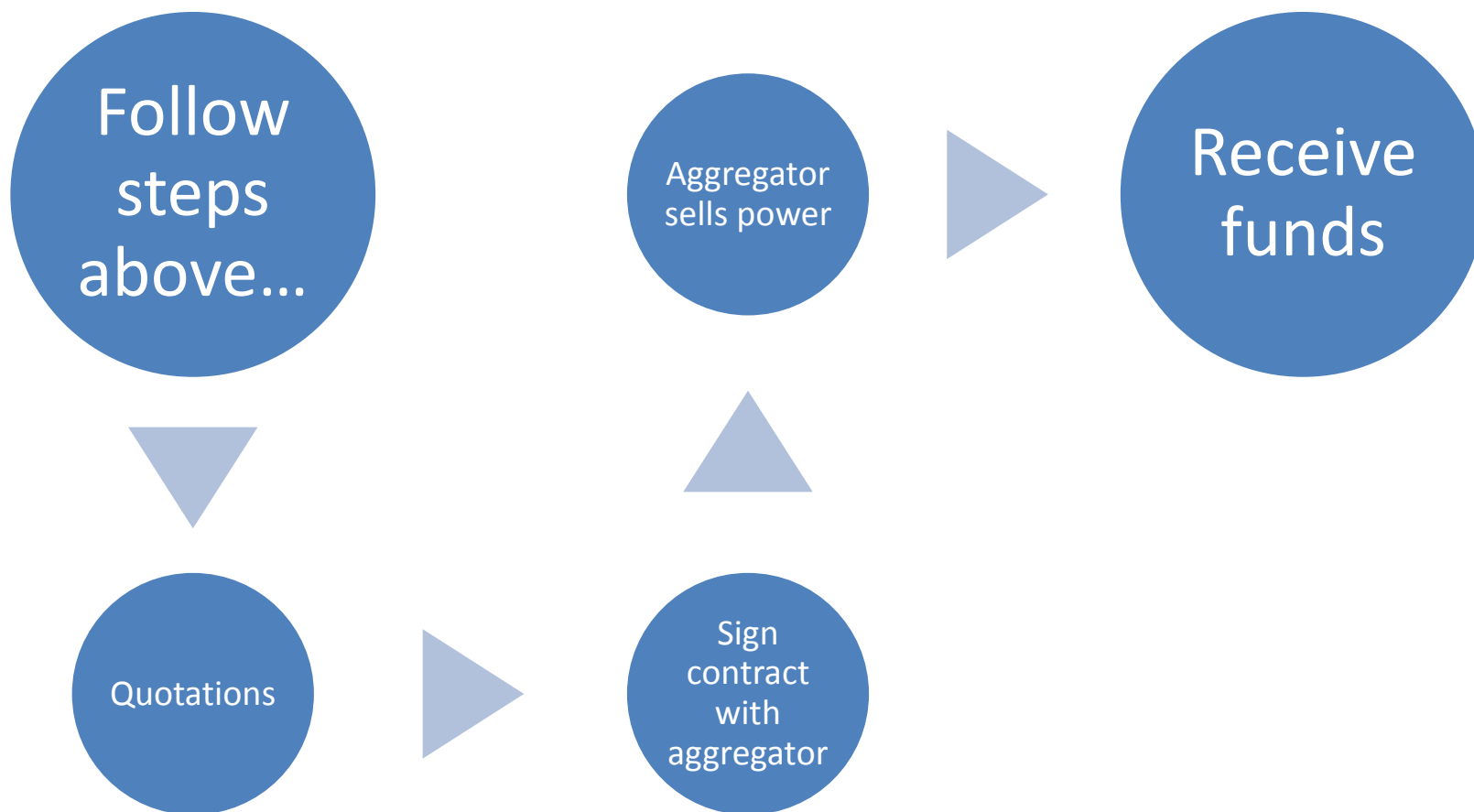




Steps for Cooperative

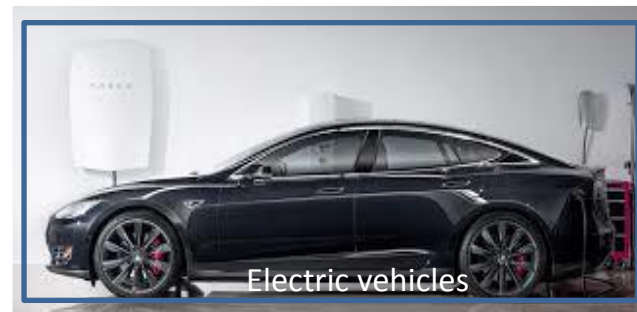
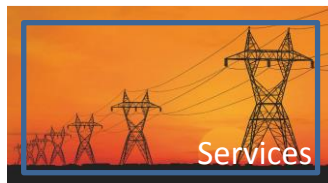
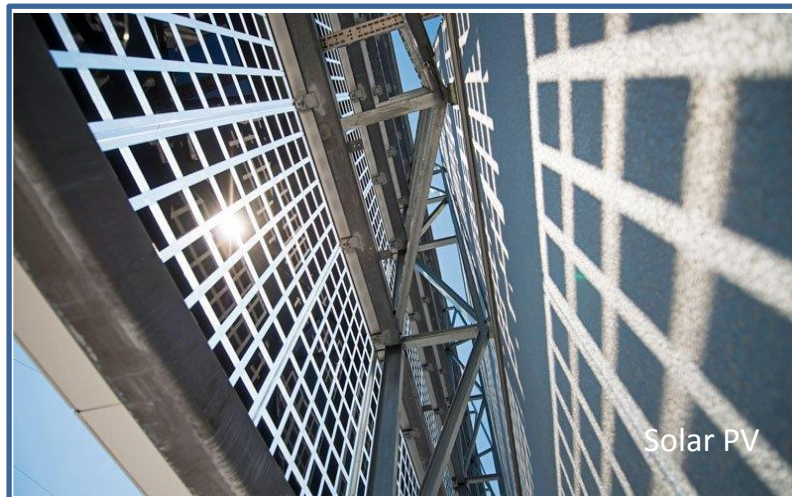


Steps for VPPs/aggregators



Solar+Products +Services

VFINANCING 





Questions?

Sonia Dunlop

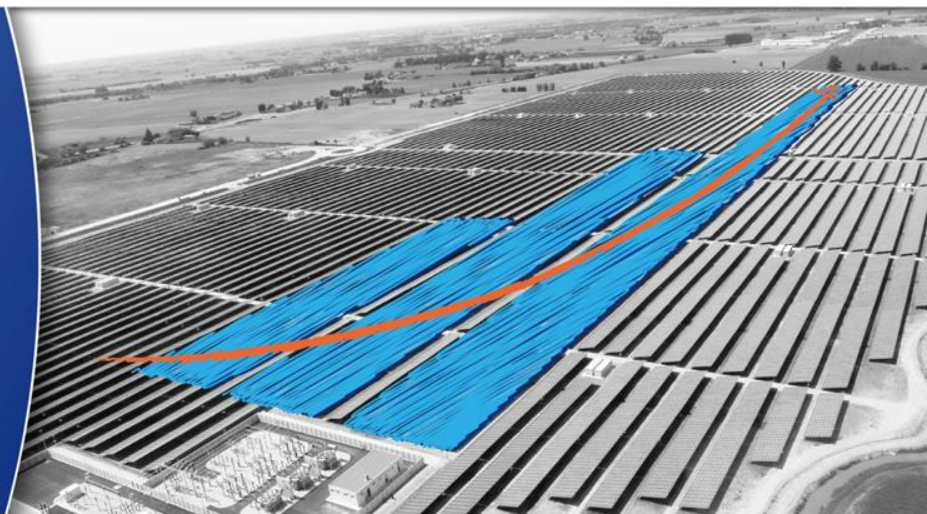
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Workshops with financial community (T6.2)

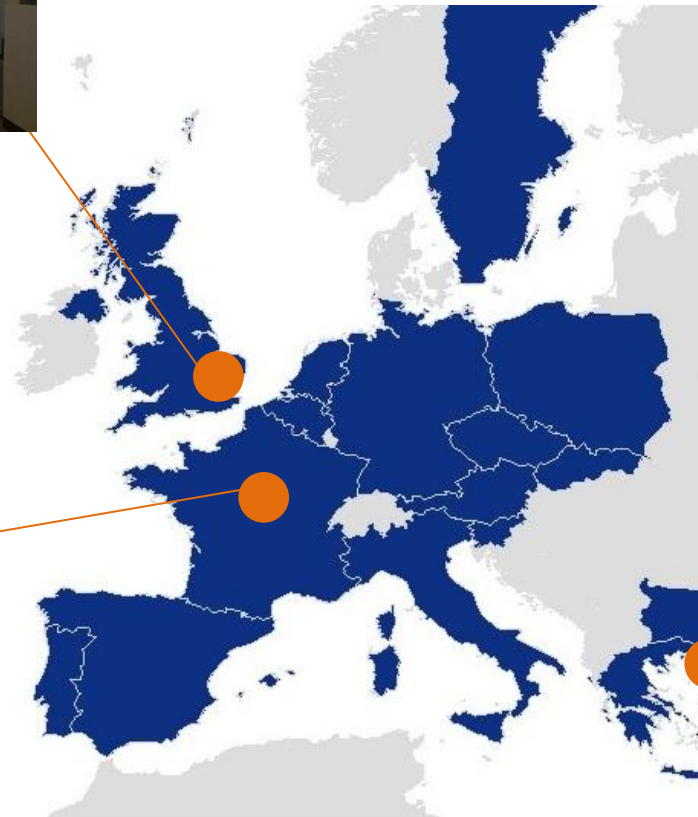


Sonia Dunlop, Policy Adviser, SolarPower Europe

PV Financing project meeting, Brussels, 17-18 October 2016



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EU-level financial workshop



INVESTING IN EUROPE'S SUNSHINE: encouraging finance and reducing risk

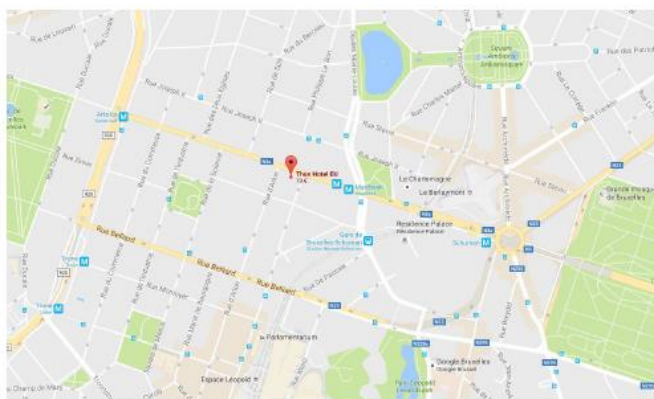
Date: Wednesday 26 October 2016 from 10:00 to 14:30

As the cost of solar PV modules and the associated balance of systems kit has fallen dramatically over the last few years, the cost of *financing* a project has become an increasingly important factor in determining whether it goes ahead or not.

The PV FINANCING project, funded by the European Commission's Horizon 2020 research and innovation programme, is working to identify the best business models and financing schemes for solar PV systems across Europe.

This EU-level workshop with the financial community (T6.2) will build on the seven national workshops in Austria, France, Germany, Italy, Turkey and the United Kingdom and seek to identify potential EU-level solutions for mitigating risk and making it easier for projects to get finance across all member states.

Location: Thon EU Hotel, Rue de la Loi 75, 1040 Brussels



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646554

Speakers include:

- Josh Roberts, climate and energy lawyer, ClientEarth
- Marc Dedry, Director of retail and broker partnerships, Alphacredit/BNP Paribas
- Ursula Bordas, Policy Adviser, PensionsEurope
- Matthias Graf von Armansperg, Adviser, Accelios Solar
- Jochen Hauff, Head and Business Development, Energy Industry & Policy, BayWa r.e.



Questions?

Sonia Dunlop

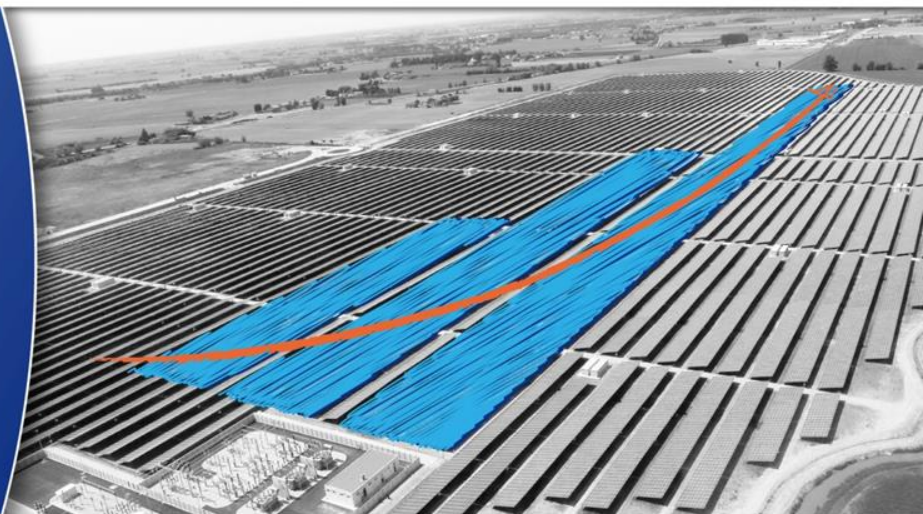
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Policy Advisory Papers (D6.3-D6.7)



Sonia Dunlop, Policy Adviser, SolarPower Europe

PV Financing project meeting, Brussels, 17-18 October 2016

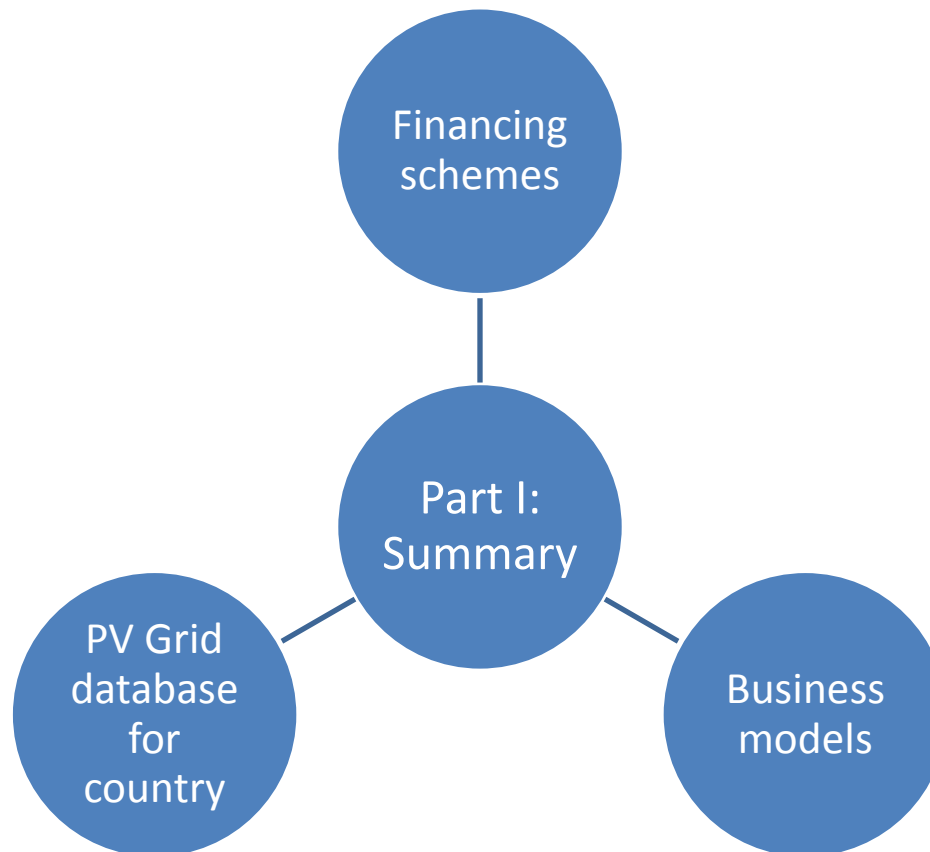


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Policy Advisory Papers (D6.2 and D6.4)

Instructions:

- a short description of the main solar PV business models
- present the main barriers for those business models
- present the key risks for investors and banks
- summarise the results of WP 2, 3 and 4 and present them in an accessible format for stakeholders to read and understand
 - WP2: identification of best-suited PV business models and barriers
 - WP3: financing schemes and related barriers
 - WP4: national business model implementation guidelines
 - WP5: upgrade and maintenance of the PV GRID database
- provide precise recommendations (to both government *and* private sector stakeholders?) on how to overcome the barriers that hamper innovative solar PV business models
- come up with ideas for support schemes that focus more on indirect *risk mitigation* support rather than direct 'operating' financial support
- give advice on how the regulatory framework and support schemes could be improved
- in the case of the EU advisory paper, present the key findings from the national advisory papers and generalise them to make them relevant for other European countries
- describe how the EU policy agenda fits in with these issues
- SPE to provide template to national partners, ECB and FS will provide feedback and review the national advisory papers.
- Based on the national advisory papers SPE, with the support of BSW, will summarise them in a EU Advisory Paper, which will be reviewed by all project partners.





No translations of D6.2 so...



Questions?

Sonia Dunlop

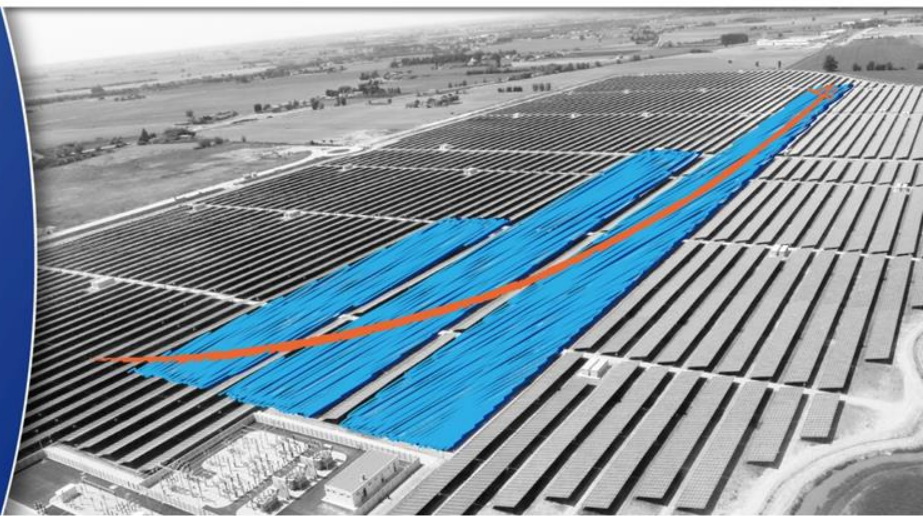
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Workshop with EU policy-makers (T7.6)



Sonia Dunlop, Policy Adviser, SolarPower Europe

PV Financing project meeting, Brussels, 17-18 October 2016



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646554

Workshop with EU policy-makers



- Deadline: 30 June 2017
- Minutes of workshop deadline (D7.11): March 2017
- With Solar Bankability and CrowdfundRES?
- Participants: MEPs, Commission officials, Council...
- Organisation: in European Parliament?

Questions?

Sonia Dunlop

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Reccommendatiuons

Extra back-up slides

Dissemination of Policy Advisory Papers



- Request meetings with that country's MEPs and permanent representations based on the national + EU report?

Policy Advisory Paper (D6.4)

- Summary of financing schemes (WP3)
- Summary of business models and their barriers and risks for investors (WP4 and WP2)
- Description of PV Grid database for your country (WP5)
- Policy recommendations to government and private sector on how to overcome each barrier
 - Try to go beyond requests for direct ‘operating’ financial support and instead focus on measures that will overcome barriers and mitigate risks
- Give advice on how the regulatory framework and support schemes could be improved
 - Multi-family residential segment
 - Multi-tenant commercial buildings
 - How could regulation allow adoption of corporate PPAs, self-consumption, cooperatives, aggregators or leasing? Variants of PPAs?
 - Cost of capital
 - Export price
 - Grid services revenues
 - Bankruptcy and re-location
 - Grid charges and taxes
 - Curtailment and priority dispatch (EU Renewables Directive)?
 - Property law
 - Liberalisation of electricity market
 - Price controls and import tariffs
 - Political risk