

Ireland's Solar Potential

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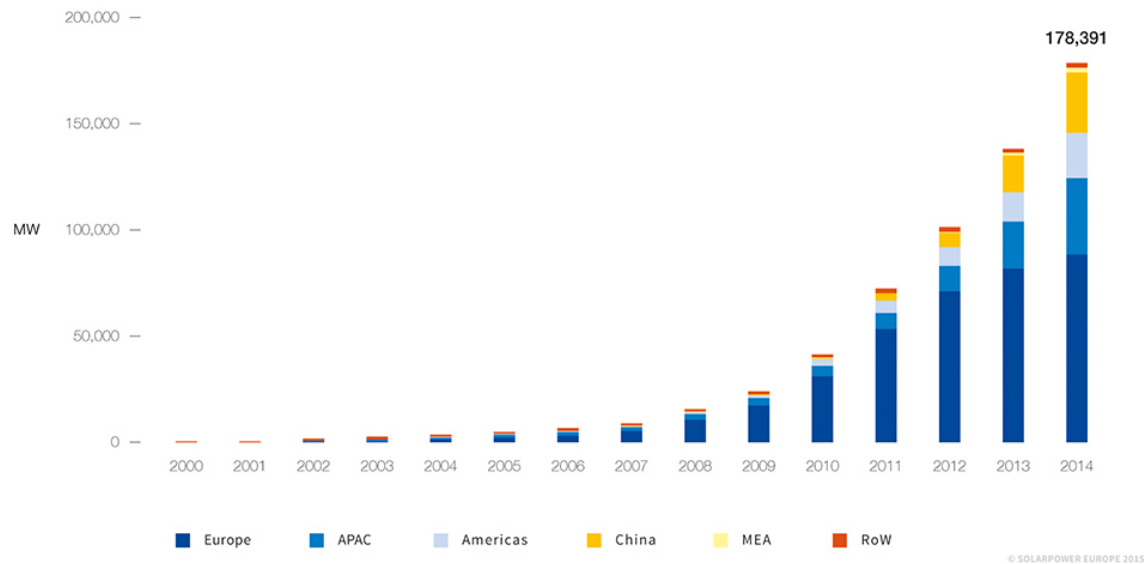
ISEA

- The trade representative body in Ireland
- Founded in 2013 to promote solar in Ireland
- Currently over 85 members
- Recent outputs include:
 - Best Practice Recommendations for Solar and Planning
 - Recommendations for Solar and Community Involvement
 - Green and White Paper Submissions on Energy Policy
 - Commissioned KPMG Report on Solar Potential in Ireland

THE GLOBAL PV MARKET

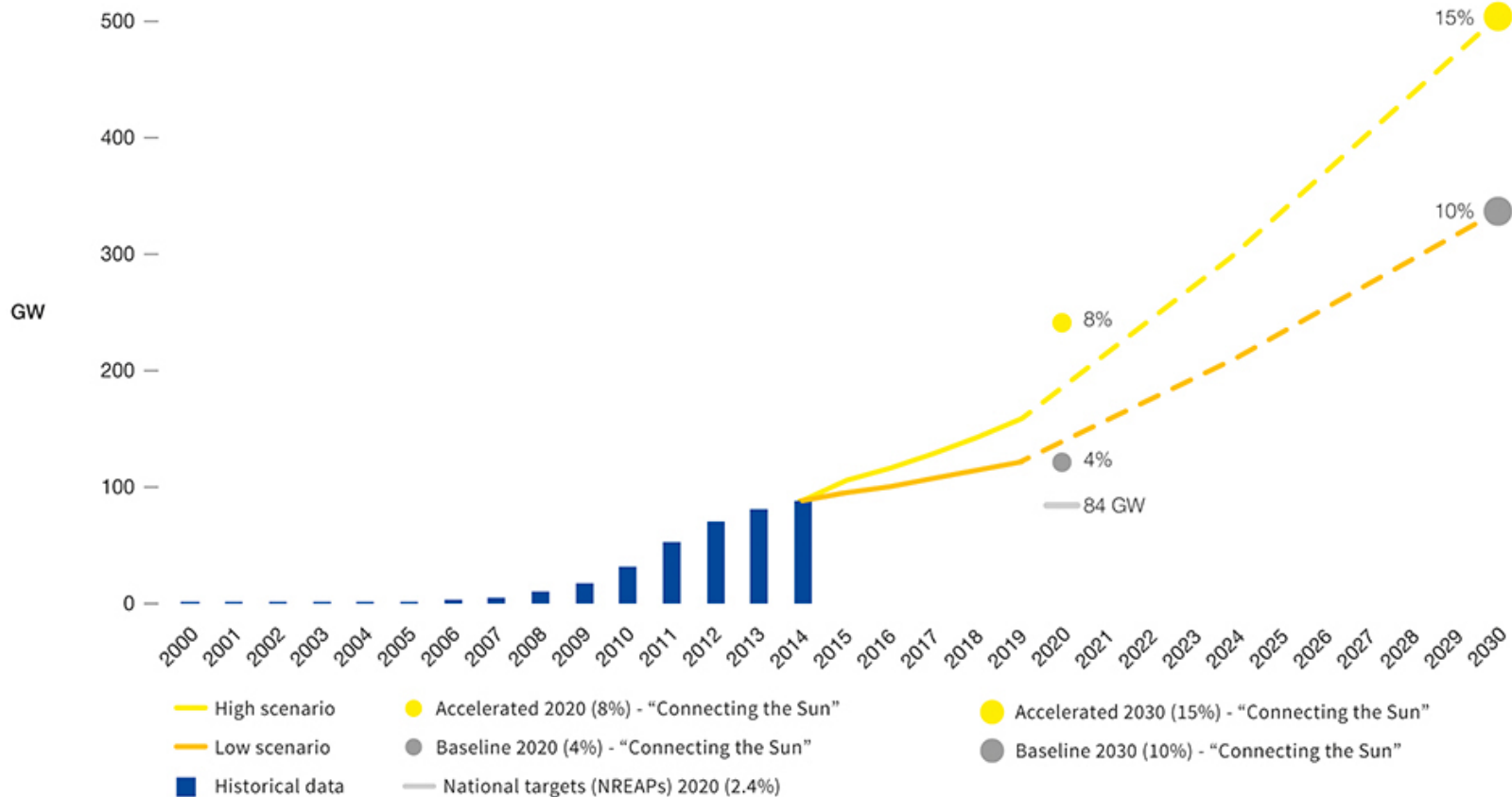
- Global investment in Solar PV has eclipsed wind annually for the last five years (*Bloomberg*)
- Global new investment in 2015 was \$161bn, more than gas and coal combined (*The Economist*)
- Solar meets **4% of European electricity demand** and 8% in Germany, Italy & Greece (*SPE*)

EVOLUTION OF GLOBAL SOLAR PV CUMULATIVE INSTALLED CAPACITY 2000-2014



THE PROJECTED EU MARKET

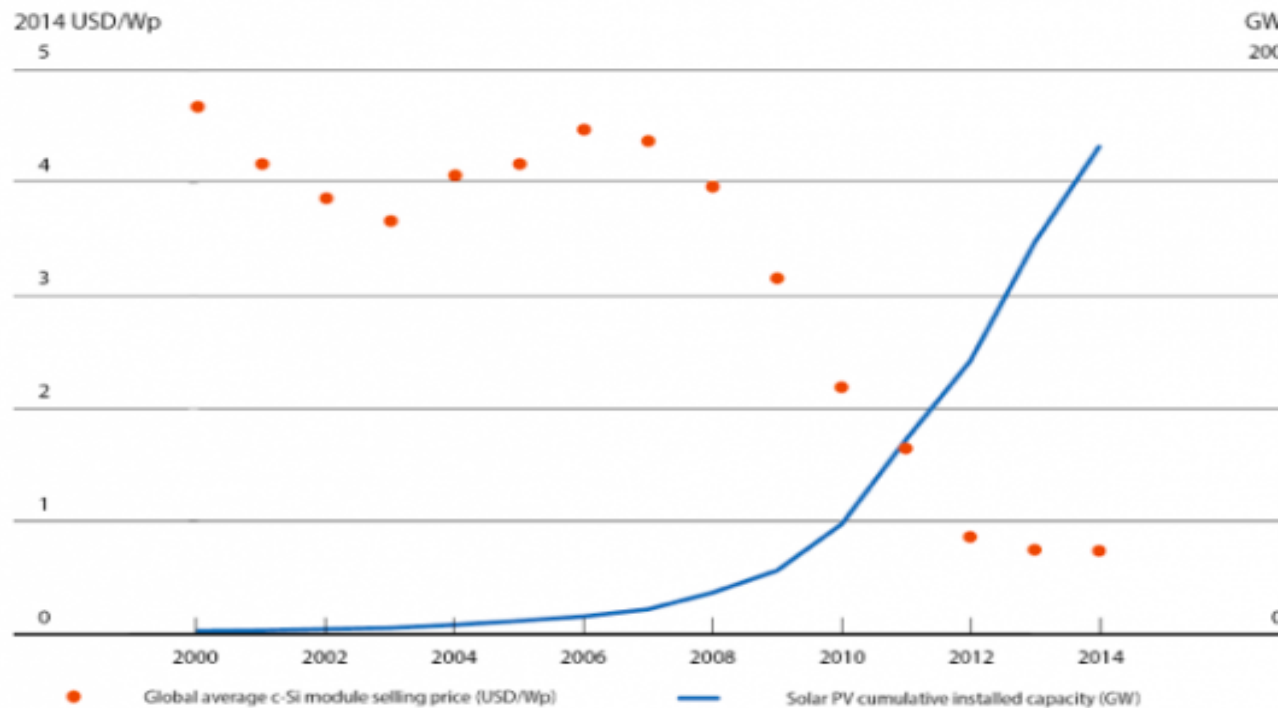
SOLAR PV CUMULATIVE CAPACITY FORECAST COMPARED TO SOLARPOWER EUROPE'S 2030 SCENARIOS



THE COST OF SOLAR

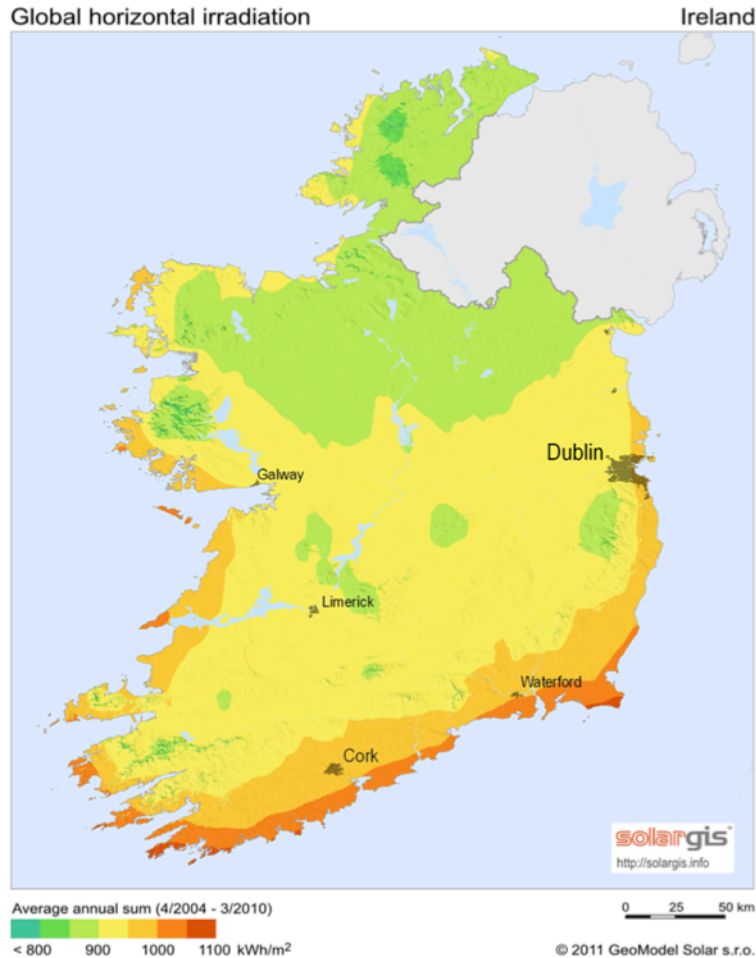
Large scale manufacturing has resulted in dramatic cost reduction in modules

FIGURE 2.2: CUMULATIVE GLOBAL SOLAR PHOTOVOLTAIC DEPLOYMENT AND SOLAR PHOTOVOLTAIC MODULE PRICES, 2000 TO 2014



Sources: IRENA and pvXchange, 2014.

SOLAR POTENTIAL IN IRELAND



Drivers

- White Paper on Energy Policy and the Programme for Government call for solar.
- Energy security (>80% of our energy is fossil fuel based and imported).
- Compliments wind.
- Significant fines for not meeting 2020 targets.
- GHG and carbon emissions are increasing.
- Sufficient solar resource and suitable land available.
- Solar is the cheapest form of renewable generation after on-shore wind.
- Current cost of funds are low.

SOLAR POTENTIAL IN IRELAND



Challenges

- No government support mechanism.
- Development timeline and grid connection is longer than most of EU.
- Costs of grid connection are high.
- There are no planning guidelines.
- Solar is a single digit margin business.

STATUS OF INDUSTRY

- Part L of the building regulations has lead to a modest sub 3MW market to date.
- There is no support mechanism for solar PV.
- Over 4.8GW of grid applications have been made.
- Less than 120MW has been contracted or has planning.
- An announcement on policy support is expected by Q1 2017 with further consultation.
- It is expected that DG Competition will approve support mechanism by end of 2017.

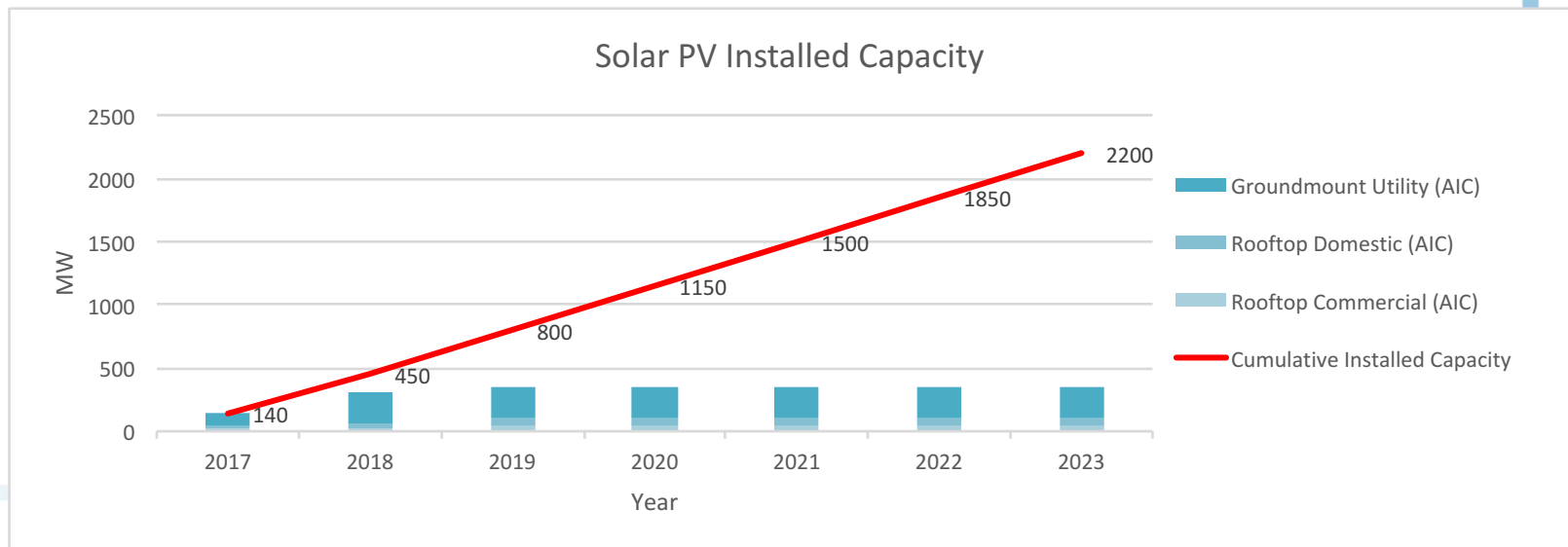
ISEA'S VIEW



- Ireland unlikely to achieve 2020 targets
- Solar an important part of the energy mix
- Only 1 -2 GW of current grid applications viable
- 1.5 -2 GW achievable by 2023 and 3 GW by 2030
- Support mechanism - *market driven*

THE SUPPORT REQUIRED

- To ensure a sustainable industry a stable regulatory framework is required
- Value for money for the consumer must be a cornerstone of this support.
- **Ground mount solar:** Annual competitive auction, indexed REFIT or CDF bid.
- **Rooftop solar:** An indexed FIT, with annual digression for new projects.
- Support to deploy over 2GW of solar PV between 2017 and 2022 is equivalent to a 1% increase on consumer electricity bills (an average of €25m per annum).



PROPOSED SUPPORT MECHANISM

2- Way CfD Mechanism

- Based on difference between wholesale price and auction price
- Clawback to government if wholesale price $>$ strike price
- Auctions every 6 months
- Budget pre-determined based on MW determined by price achieved in auction
- Eligibility criteria: Land, Planning, Grid

THE COSTS OF A CfD

- 2018 All-in clearing price: 10c – 13c/kwh
- Assuming rollout of 250 MW per annum:
 - Year 1 costs €12m
 - Costs peak in 2022 at €38m
 - Avg cost €15m/annum
- Will account for 10% of 2016 PSO levy at peak 5% on average

BENEFITS OF SOLAR TO IRELAND

- Contribute to our 2020 targets and beyond.
- A Gross Value Added of over €2 billion and over €0.8 billion in tax revenues.
- For every €1 of support, the industry will contribute €3 to the economy.
- Participate in the leading generation technology globally.
- 7,300 jobs created and sustained per annum.
- Efficient use of existing grid infrastructure.
- Diversifies energy supply and increases security.
- Empowering Irish citizens and enabling community ownership.
- Agricultural activity diversification and rural economy benefits.
- A net planning and biodiversity gain.