



# OVERVIEW OF UK SOLAR FINANCING SCHEMES

BASED ON A PRESENTATION “SUITABLE BUSINESS MODELS & FINANCIAL SCHEMES  
FOR PV DEVELOPMENT IN EUROPE” ORIGINALLY GIVEN IN BRUSSELS, 20<sup>TH</sup>  
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## DISCLAIMER

- The contents of this presentation are based on the market experience of Giles Clark and in the UK and elsewhere
- Where figures are given, they do include estimates which represent the position as Primrose sees it in Q3 2016
- Other market participants may see different data and have other views
- This presentation doesn't include any information which Primrose considers to be market sensitive – Information given is either Primrose's own view or based on publicly available data
- These are not the views of the STA

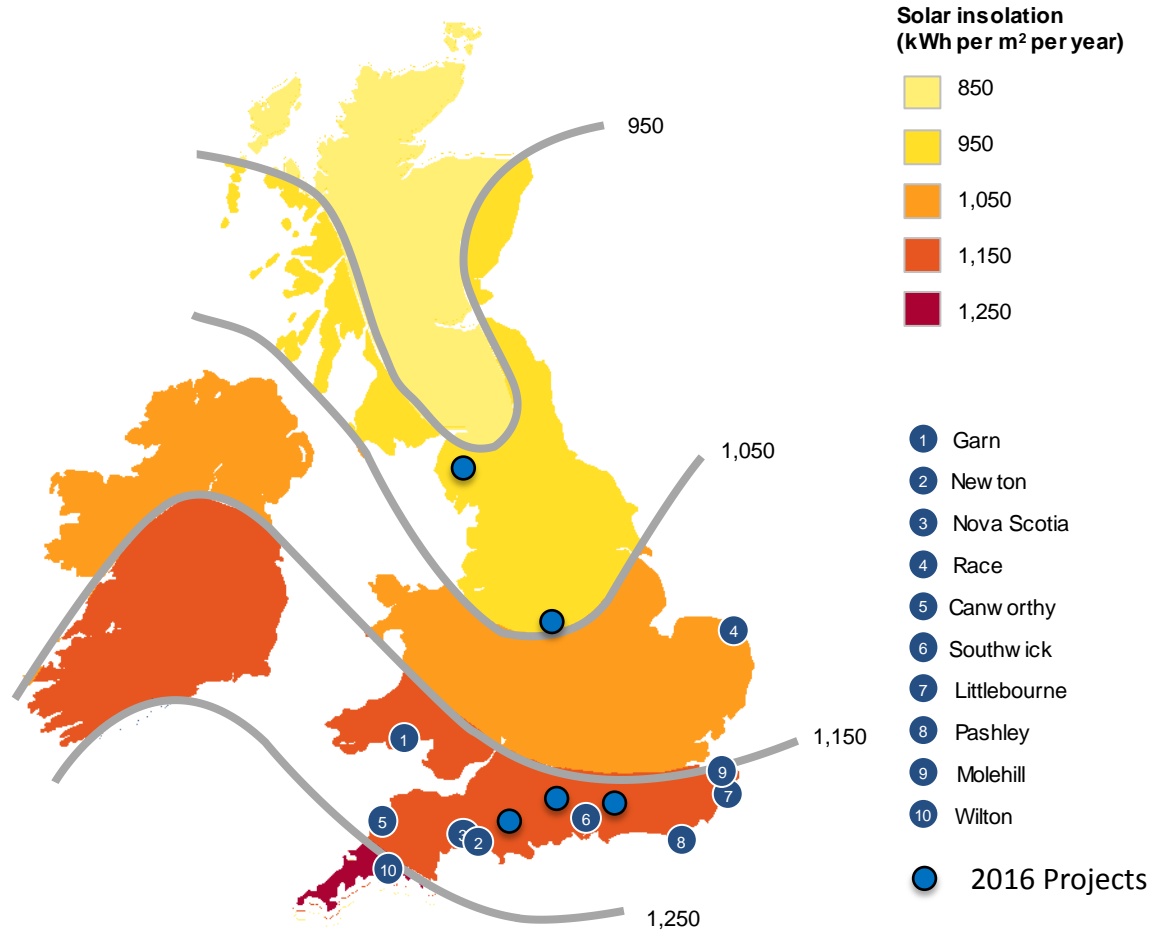


# INTRODUCTION

- Primrose Solar was founded in Q4 2013 to invest in the construction of ground mounted solar in the UK
- Investor base includes a US hedge fund
- Primrose has built 253 MW of solar in the UK. Portfolio includes 3 of the largest sites in the UK (41, 48 and 50 MW)
- 243 MW built under the RO with investment grade PPA support, 10 MW FiT
- 80 MW refinanced with long term debt from M&G in 2014
- 49 MW refinanced with short term debt from DB in 2016
- 95 MW sold to a UK yieldco (BSIF) in Q1 2016
  
- Primrose CEO, Giles Clark, has worked in solar since 2006.
- CFO and founder at Sunray which developed and sold a pipeline of 1.2 GW to Sunpower in 2010
- Experienced investor in ground mounted solar and familiar with other solar business models



# PORTFOLIO





# EVOLUTION – UK SUBSIDY REGIMES

- Three different support mechanisms in the UK
  - Market opened in Q2 2010 with Feed-in-Tariff (FiT) for rooftop and ground solar.
  - Subsidy value under 2010 FiT was £385-529/MWhr
  - Strong market response (mostly rooftop) led to FiT reductions in 2011 and subsequent market collapse
  - 2<sup>nd</sup> and stronger phase of activity 2013-2016 dominated by ground mounted solar built under the Renewables Obligation (RO) mechanism
  - RO is a hybrid with asset revenue derived from:
    - RO certificates at ~£44/MWhr per RO in 2016
    - Market PPA, where value has fallen from £50+/MWhr to £35+/MWhr
    - Total revenue for an RO asset in 2016-2017 is £85/MWhr
  - Auction based CfD mechanism introduced in 2015. Only one round held and limited number of solar contracts offered at £50-79/MWhr
  - Government originally underestimated appetite for subsidy and responded by withdrawing and curtailing subsidies in 2011-2015. Unlikely to over-subsidise again in any volume
  - Limited FiT support available 2016+ and no RO support Q1/2017+. Future CfD support uncertain



## EVOLUTION – VOLUME & VIABILITY

- Total solar PV deployed at the end of Q3 2016 is 11GW+ in the UK, of which an estimated 7-8GW+ is ground mounted (predominantly under the RO)
- Estimated total capex to date is £12-15bn+, including grid and project rights
- Asset ownership remains fragmented with <50% of ground mounted solar in the hands of large investors (biggest is Octopus with 1GW+)
- Investor yields squeezed from 2013 to 2016
  - Rising developer fees 2012-2015
  - Increase in the number of investors chasing projects
  - Construction seen as less risky, very low failure rate despite winter build
- Market maturity evidenced by emergence of UK specific yieldcos (e.g Bluefield, Next, Foresight)
- Banks and other financial institutions increasingly comfortable with solar as an asset class
- Pension funds still under-represented
- Secondary market consolidation in 2016+
- But..... Merchant power seen as increasingly uncertain







# SOURCES OF FUNDING

## WARNING- OPINIONS !

Different classes of investor with different costs of capital and business models:

- Tax advantaged investment vehicles (EIS/VCT or Inheritance Tax relief) invest at very low yields. Asset IRR of 4-6%. Will fund construction. Octopus/Ingenious/OxCap/Foresight/Guinness and many others
- Yieldco. Approx 6-7% yield (based on published market data) and will only buy operating assets. Next, JLEN, Foresight, Bluefield, Terraform. Different attitudes to construction
- Private Equity at 8-10% depending on attitude to risk. Will fund construction. Not currently active (?). Magnetar, Primrose, others. May chase yield compression
- Community projects at 5-7% (yield offered in prospectus) with crowdfunding.
- EPCs who fund construction to maximise margin or in hope of launching a yieldco. Conergy, Renesola, Trina, others
- Developers who can make 50%+ IRR *if* they succeed
- Chinese money. CNBM-Jetion worked with BSR on 100+ (?) MW 2015+
- Homeowners for small FiT
- Infra money, Aviva for FiT rooftops
- Rockfire with local authority funds buying assets from BSR. 6% bonds

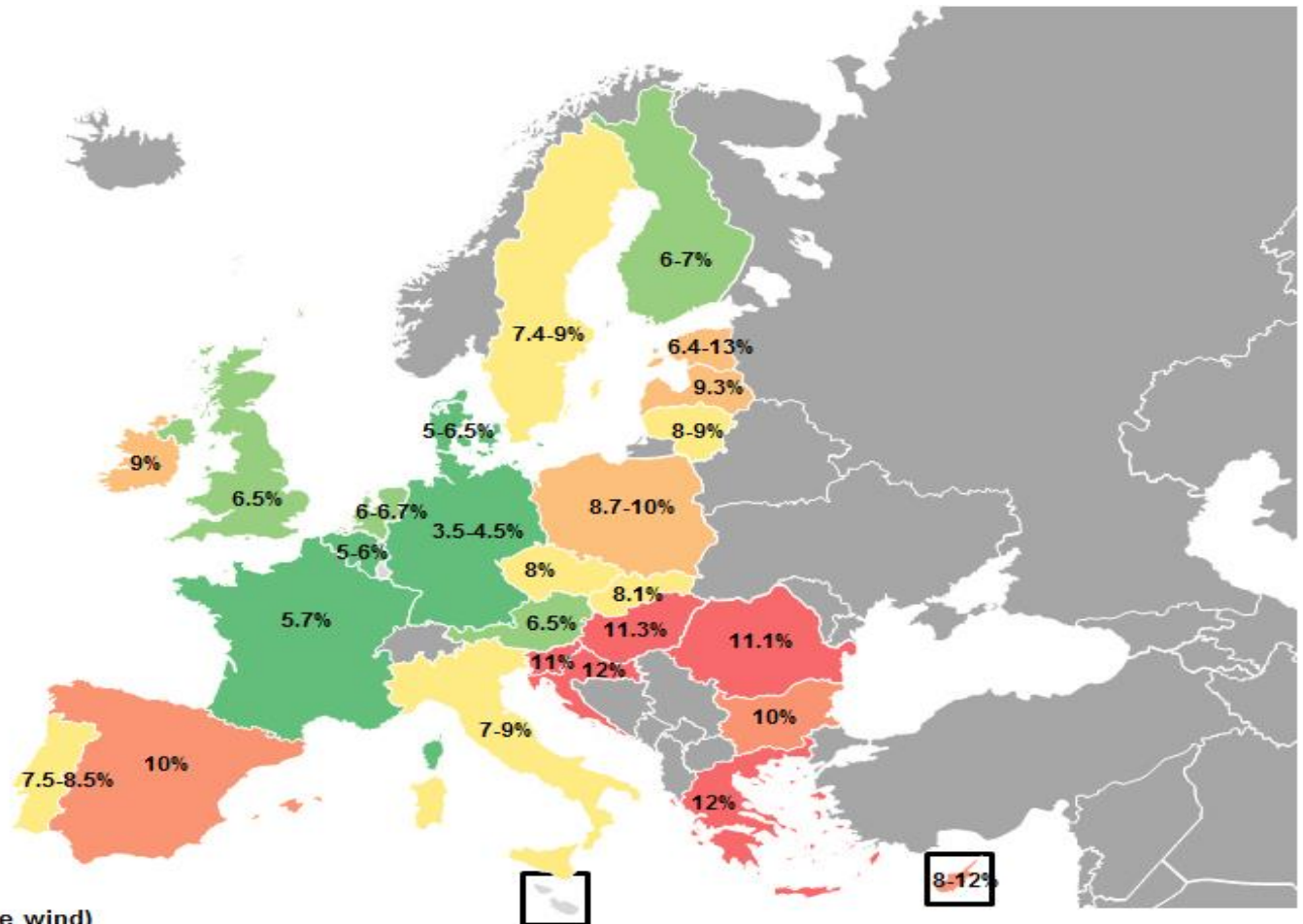
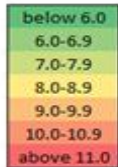
Changing perceptions on yield and risk => changing behaviour



# RELATIVE COST OF CAPITAL – WIND ASSETS



DiaCore



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



## UK SOLAR FINANCING – WHAT NEXT?

- Secondary market consolidation for existing operating assets. Yieldcos + new entrants. Infra/Pension investors
- Market evolution into post-subsidy assets.
  - Direct wire, bundled with other goods/services, storage (?). More commercial rooftop, less large ground mounted
  - Changing approaches to merchant power. Long term corporate PPA market developing. Self consumption rather than export
- Tax advantaged investors will engage where the law allows
- Inward investment from other markets? UK Solarcity/Tesla?
- Community/Crowdfunding, where viable projects emerge
- Local authority/public bodies looking for yield. Tied to self-consumption?
- City initiatives, e.g London