

10.30-11.15

# The rise of the prosumer – Making the most of onsite generation

Utilising existing assets and is it worth investing in others?



# CORNWALL INSIGHT

CREATING CLARITY

# Behind the meter and co-location

17 April 2018

Robert Buckley

# New Routes To Market



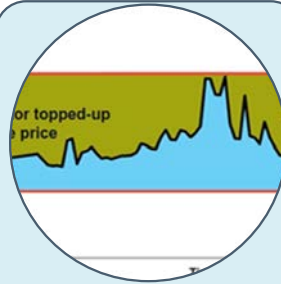
## **Re-powering subsidy free:**

Old NFFO and early RO onshore sites now looking at re-powering with next generation turbines. Routes to market include private wire and corporate PPAs



## **Storage co-location:**

Pen y Cymoedd Wind Energy Project has installed a 22MW battery using existing wind farm connection. More for additional revenue than flexibility. Solar profiles compatible with co-location



## **Subsidy free CfDs:**

Some developers looking at a private CfD arrangement where a supplier (or large-end user under a corporate PPA) provides a long-term price guarantee at a rate that is profitable to build

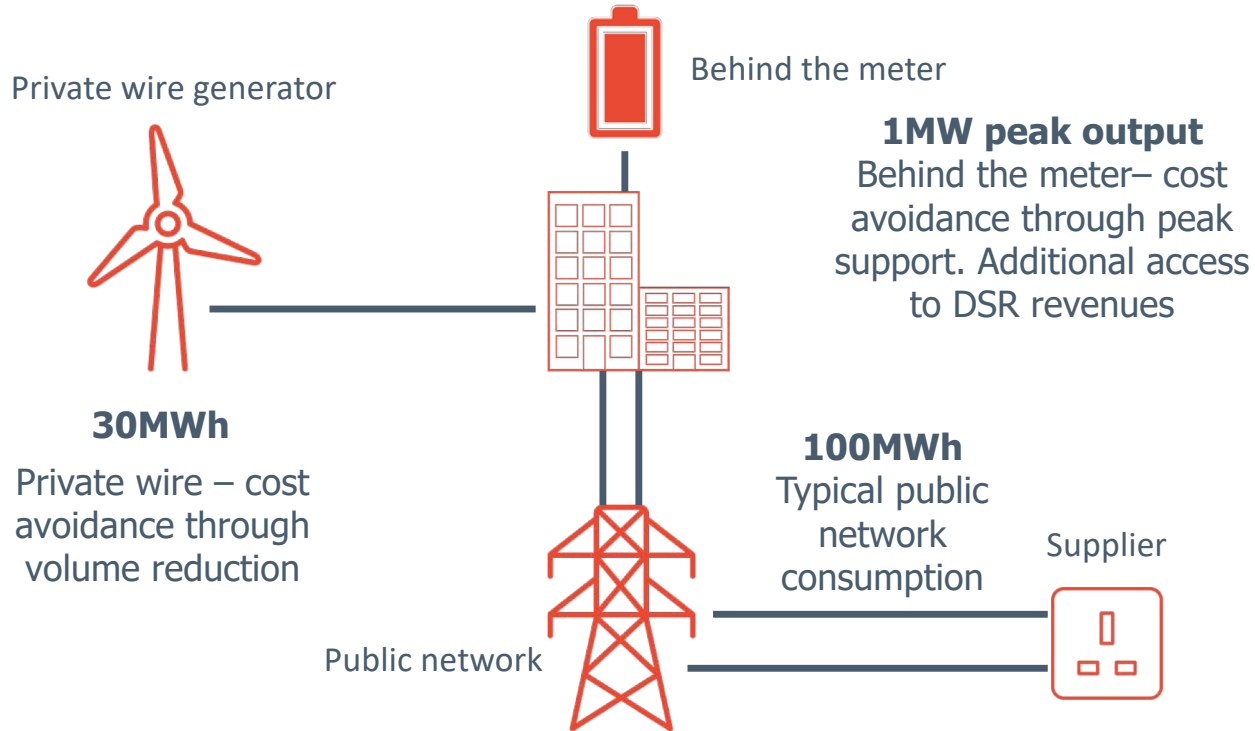


## **Private Wire/ behind the meter:**

Alternate route to market for current projects without a subsidy route. Physical connection between generator and large end-user. Price fix based on public network savings



# Private wire business model



# Private wire cost avoidance

Cost component	HV HH customer (£/MWh)
Wholesale	£45
Transmission	£1.0-£2.2
Distribution	£5.9-£20.0
Balancing services	£2.20
AAHEDC	£0.3
Losses	£1.0 - £1.9
Renewables Obligation	£21.9
Feed-in Tariffs	£5.9
Contracts for Difference	£4.8
Capacity Market	£2.8
Supplier costs	£1.0-£3.0
VAT @ 20%	£18.8 - £22.0
Climate Change Levy	£5.8
<b>Total</b>	<b>£117.2 - £137.8</b>

**Wholesale commodity =**  
~36%

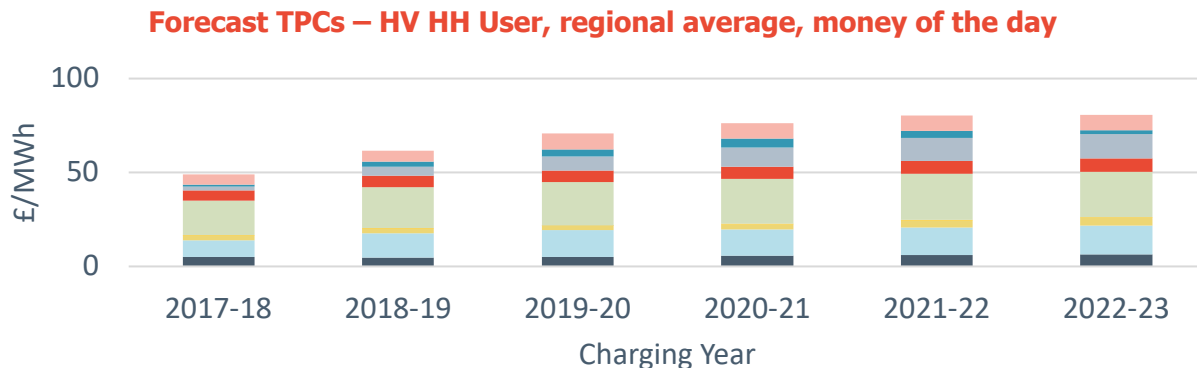
**Networks = ~14%**

**Policy = ~28%**

**Supplier costs and margin = ~2%**

**VAT/Tax = ~21%**

# Rising non-commodity costs

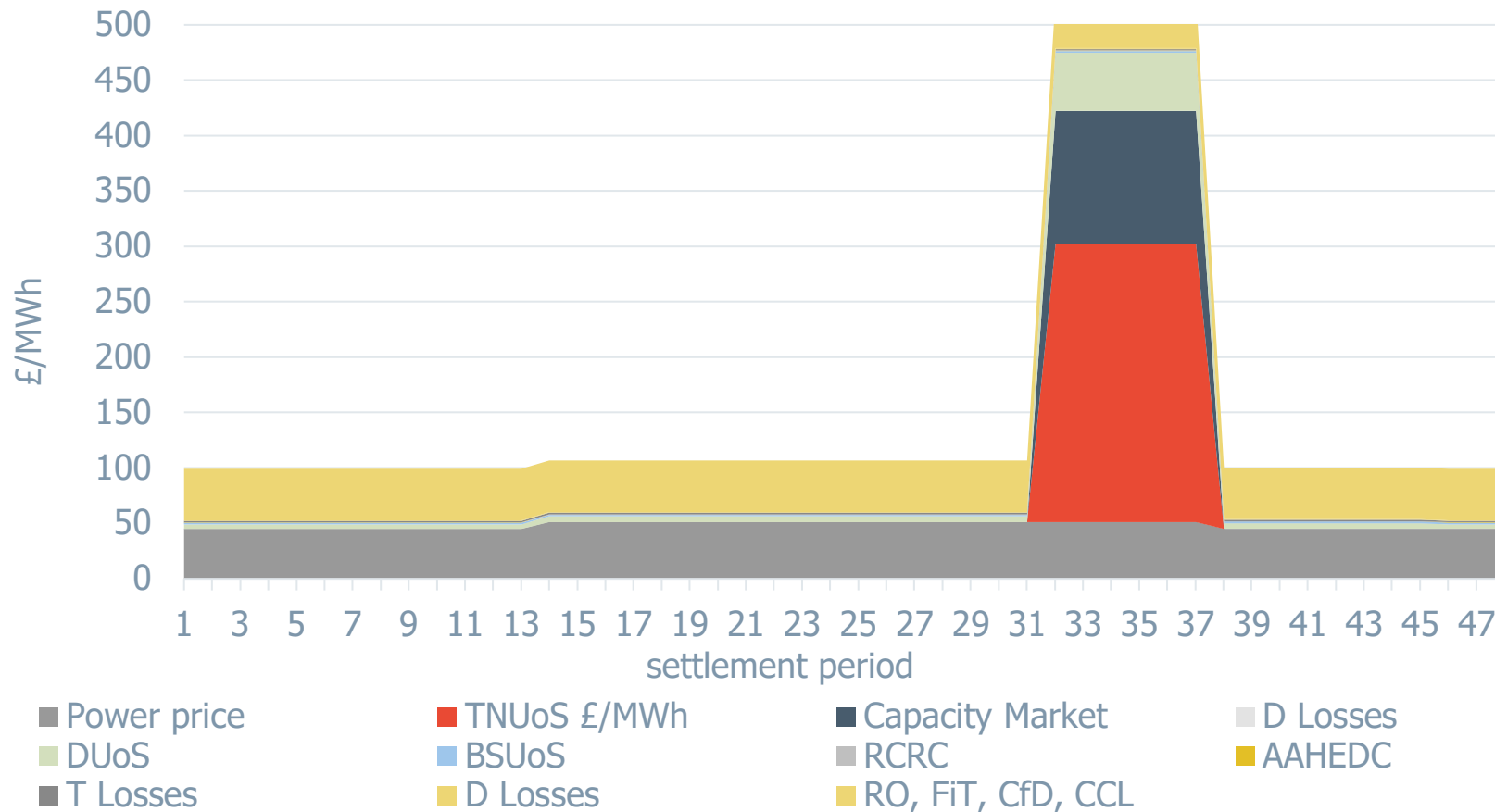


■ Transmission  
■ System balancing (BSUoS)  
■ Renewables Obligation (RO)

■ Distribution  
■ AAHEDC (HDCA)  
■ Feed-in Tariffs (FiT)

# Timing is everything

Daily tariff profile, HV network winter 2020-21, SE region

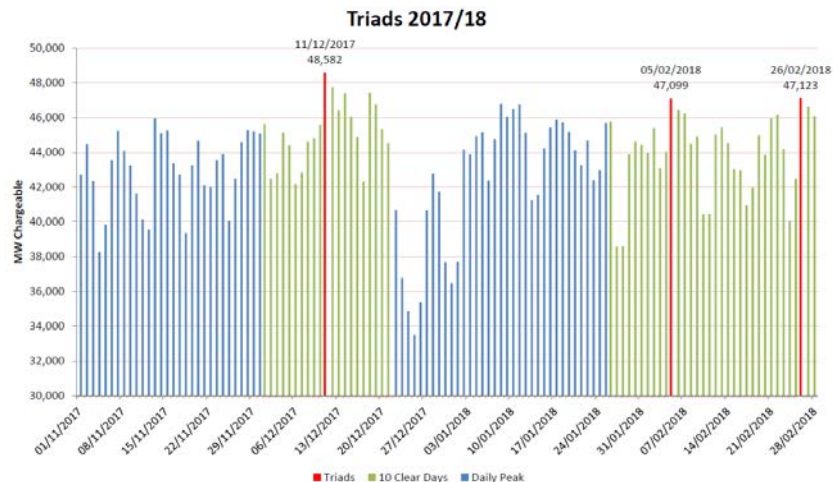




# Understanding regulatory risk

- Electricity system is changing rapidly:
  - Intermittency and security of supply
  - Network, policy and market signals all drive generator and consumer behaviour
- Look out for, e.g:
  - Ofgem's Targeted Charging Review
  - Significant Code Review
  - Capacity market rule changes
  - Charging Futures Forum (CFF)
  - ENA's DNO to DSO work

## Triad peaks winter 2017-18



*National Grid*

# Contact details

Robert Buckley

Head of retail

01603 604400

[r.buckley@Cornwall-insight.com](mailto:r.buckley@Cornwall-insight.com)



[@CornwallInsight](https://twitter.com/CornwallInsight)



[www.cornwall-insight.com](http://www.cornwall-insight.com)

- The Energyst Event 2018 -

# Nottingham City Council

Rise of the prosumer:  
making the most of onsite generation

**Luke Raddon Jackson** – Energy Projects Manager



**@nttmenergycity**



**@lj\_energy**



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**City Council**

# Our approach to onsite generation



**Greener Buildings**



**Nottingham  
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## Two-pronged commercial agenda



UK Smart Cities Index 2017: Innovation Highlights

NAVIGANT

**WINNER  
GREEN  
ENERGY  
AWARDS  
2017**



**Greener Buildings**



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# What are the opportunities available to you?

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- Understand your exposure to fluctuating energy prices
- Calculate future energy costs, including the increasing 'non-commodity' element
- Deep dive into technical and financial feasibility of generation at your sites
- Review solar commercial PPAs (rooftop and car ports)
- Invest in local/regional/national energy generation

# Is the opportunity right to invest?

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- When do we buy?
- Incorporate local ideas and drive investment in generation
- Continuous review of building assets, technical and financial feasibility
- Risk appetite...



# What funding streams do we use?



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Energy  
Services



Department  
for Environment  
Food & Rural Affairs



Department for  
Business, Energy  
& Industrial Strategy



Horizon 2020  
European Union Funding  
for Research & Innovation

## Greener Buildings



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## Opportunities and challenges for onsite generation

Strategy objective / Challenge	Progress at NCC
Generate commercial income	Additional income streams incl. £300K FITs income (commercial and domestic)
Increase rental value	Increasing rental value for properties
Generate local energy	Council is generating one MILLION kWhs solar energy from it's operational estate alone
Reduce NCC buildings' emissions	29% reduction in CO <sub>2</sub> from NCC
Reduce the city's emissions	33% reduction in CO <sub>2</sub> in the city
Building regulations compliance	Robust programme in place
Improve building comfort	Better internal environment for staff reported

## What next for Nottingham City Council?

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- Holistic approach to generation types
- Use of multiple technologies to 'blend' business cases and ensure investment criteria are met
- Continue trialing cutting-edge technology
- Develop the pipeline
- Increase average ROI through process improvement

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# Thank you

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## Any questions?

**Luke Raddon Jackson** – Energy Projects Manager

**Contact us**

Energy Services: 0115 876 3270

EnergyProjects@nottinghamcity.gov.uk



**@nttmenergycity**

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