

The background features a composite image. On the left, there are rows of solar panels under a bright sky. On the right, there is a glowing, incandescent lightbulb. A large, white, stylized arrow points from the left towards the center. The overall color palette is dominated by blues, oranges, and whites.

Low Carbon Networks Fund

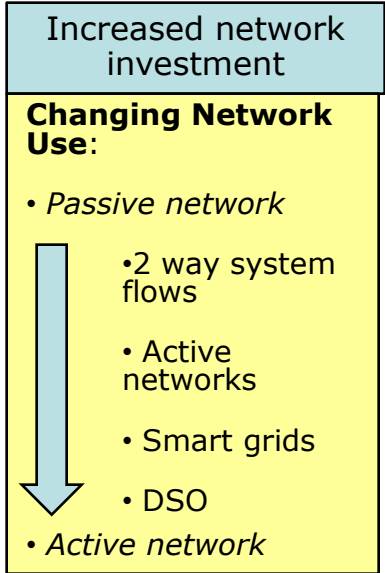
Mark Askew

Why do we have the LCN Fund?

Drivers for change in networks

Issue	Consequence
2020 targets	Significant move to low/zero carbon generation
Planning targets & ZCH	Partial local self sufficiency; more urban DG
Renewable heat incentive	Changing electricity use, district heating, heat pumps
Feed-in tariffs	Growth of small scale renewable DG
Domestic smart meters	Opportunity for DSM and ANM
Electric cars	Increase in demand but storage potential
Electric storage	Enable more intermittent DG connection/operation

Combined effect unclear, but network use will change



Need to trial how network responds to problems now in order to roll out solutions to avoid future constraints

LCN Fund requirement

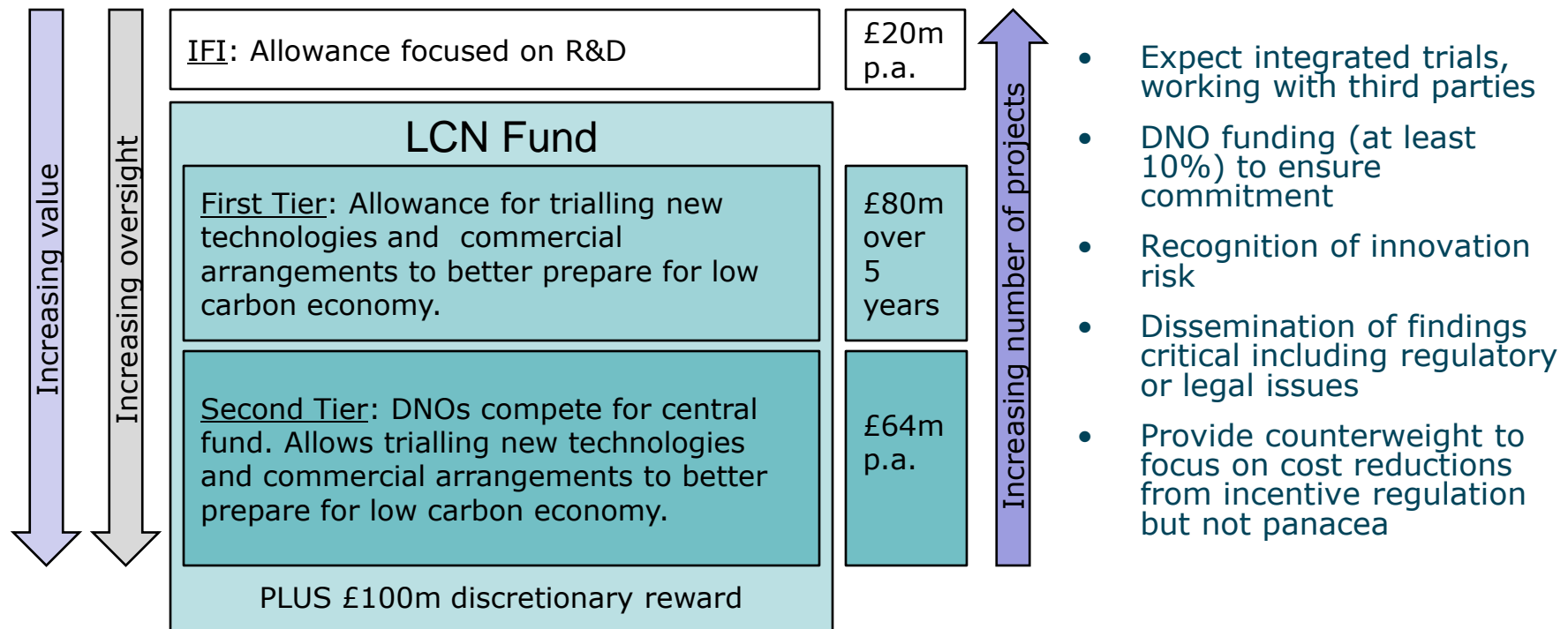
In DPCR5 we concluded that a significant innovation incentive was required

Rationale	Value
<ul style="list-style-type: none"> • Historic regulation focussed on efficiency and service (business as usual) • Low risk companies – failure not funded • No competition to gain market advantage or reap rewards from innovation • Regulatory environment – expectation that catch up will be funded 	<ul style="list-style-type: none"> • Funding sufficient to enable number of “flagship” scale trials • Leverage of funds – one trial drives learning across network • Potential derived value likely to considerably exceed the cost • Reward to mimic innovation earning potential in commercial environment

To encourage the DNOs to facilitate the low carbon initiatives and make the most of opportunities presented

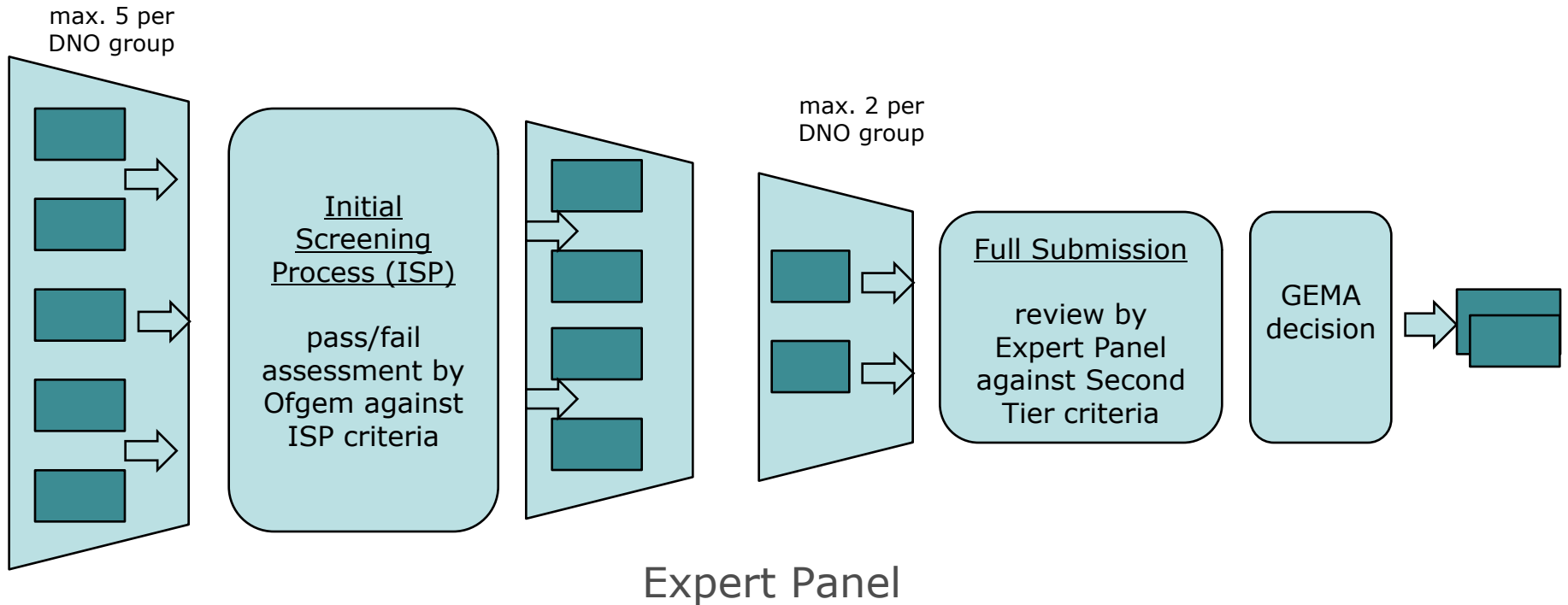
Structure of LCN Fund

The LCN Fund comprises £500m over the five year price control period



LCN Fund will develop key learning to inform radical shift in network use. RIIO is now taking this thinking further through the Innovation Stimulus

Second Tier Process



Dr Robin Bidwell (Chair) – Environmental issues
Prof. David Newbery – Economics
Sean Sutcliffe – Commercial/Network issues
Sharon Darcy – Consumer issues
Prof. Nick Jenkins - Engineering

Second Tier Evaluation

The Second Tier Evaluation Criteria are high level principles based on those used in the First Tier plus additional criteria to look at the quality of the project

Second Tier evaluation criteria

Degree to which the solution being trialled:

- accelerates the development of a low carbon energy sector;
- has potential to deliver net benefits to existing and/or future customers;
- has a direct impact on the operation of the distribution network; and
- generates new knowledge that can be shared amongst all network operators.

Degree to which the project:

- demonstrates a robust methodology and readiness of the project;
- involves other partners and external funding; and
- is relevant and timely

Projects will be evaluated across all the criteria, and the Expert Panel/GEMA will also consider the portfolio of projects (type, risk etc)

Progress so far

Second Tier

2010 Competition

11 bids worth over £150m

Leveraged external funding

Range of collaborators

4 successful projects worth £63m

Generating significant interest

2011 Competition

Further 6 bids worth £60m

Build on year 1 projects

Focussed learning outcomes

All six projects successful

Every DNO undertaking a project

First Tier

Over 20 small scale projects registered (£12m)

Covering a variety of topics

Providing learning to inform Second Tier bids

2010 Winning LCN Fund Projects

Customer-led Network Revolution

(Northern Powergrid)

Trialling of smart meters and customer-side interactions with new network technologies.



Low Carbon London – a learning journey (UKPN)

Innovation to facilitate low carbon technologies into urban and suburban networks. Leverages London’s low carbon initiatives.



Total Funding value = £63.6m

Low Carbon Hub (WPD)

Investigating how new network technologies can increase the capacity of generation (mainly wind) that can be connected to a rural distribution network. Exploring new commercial arrangements.



LV network templates for a low carbon future (WPD)

Assessing the impact of low carbon technologies connected to LV network to create generic network models to assist DNOs in efficiently planning and operating networks.



LESSONS LEARNED TO BE SHARED ACROSS THE INDUSTRY

Learning starting to emerge – 2012 key year for trials

2011 Winning LCN Fund Projects

Capacity to Customers (ENWL)

Trialling new operational techniques to release latent capacity within the existing high voltage (HV) network. The project will utilise this capacity by combining network automation and “interruptible” contracts with large customers.



Flexible Plug & Play (UKPN)

Trialling ways to improve the control of the extra high voltage network to connect increased volumes of wind generation. Using an open communications platform and develop an investment model.



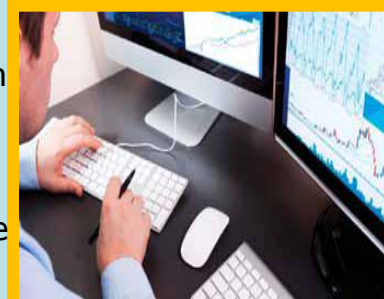
Flexible Networks (SPEN)

A project investigating how to obtain extra capacity from the existing HV network in three separate locations by co-ordinating innovative engineering practices. The project also looks to encourage large customers to improve their energy efficiency



FALCON (WPD)

Deploying smart interventions on the HV network and novel commercial arrangements with customers. Data from these trials will be used to develop an investment tool to model where these techniques can be deployed efficiently across the whole HV network.



2011 winning LCN Fund projects (2)

New Thames Valley Vision (SEPD)

A large project which is primarily focussed on developing a tool to help forecast where low carbon technologies might connect to the network. The project also trials network monitoring, energy storage and novel commercial arrangements with large customers. .



BRISTOL (WPD)

A small project investigating the potential for battery storage in conjunction with PV solar generation to be used within homes, schools and an office to provide network and customer benefits.



Total Funding value = £63.6m

Projects starting to sign contracts with partners and go out for tenders

Next steps

- Monitoring learning which emerges and looking for industry to utilise it
- Looking to integrate learning into RIIO ED1 – Sept & Feb documents
- Network Innovation Competition expanding LCN Fund principles to other network sectors from April 2013
- Future LCN Fund learning incorporated into DNO business to help them meet outputs set in RIIO ED1

The background of the slide is a composite image. On the left, there are rows of solar panels under a bright sun. On the right, a hand is shown holding a white document. In the bottom left corner, a blue gas burner is visible. The overall theme is energy and customer service.

ofgem

Promoting choice and value
for all gas and electricity customers