



# **Wrexham County Borough Council PV installation Project**

**Jonathan Edwards – Project  
Manager (01978 315441)**



# Delivering What matters 2009 - 12

## Council Priorities

- Affordable Housing
- Better Skills & Education for employment
- Carbon Emissions & energy use reduced



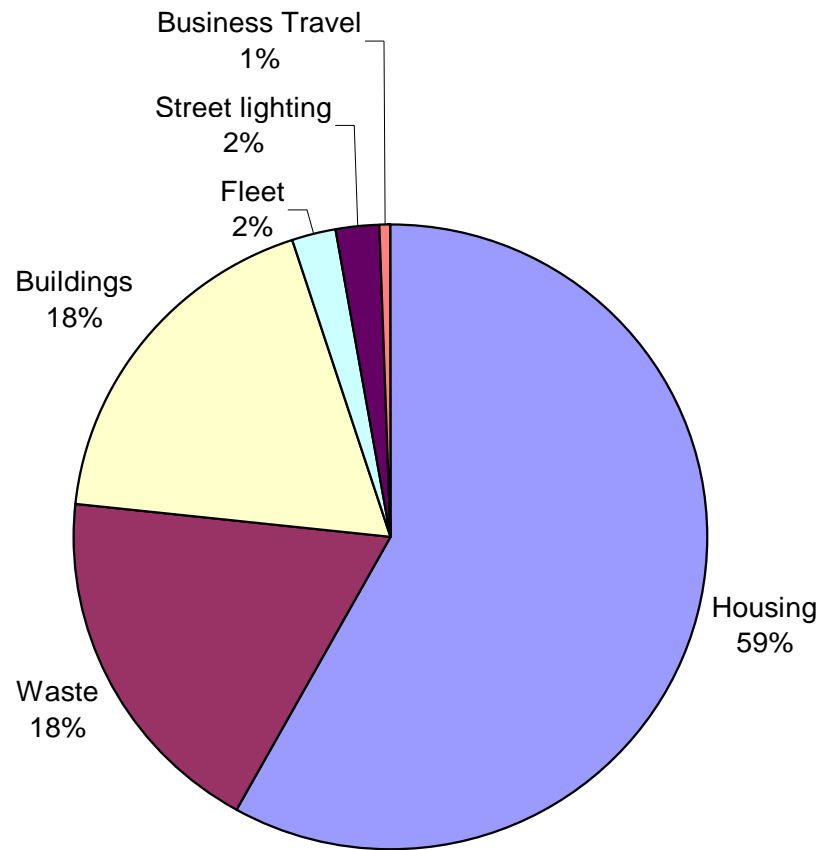


## Carbon Priority – Aims & Objectives

- Reduce carbon emissions and energy use, optimise energy efficiency and use renewable energy where possible across the Wrexham County Borough area.
- Aspirational targets – **50%** reduction **by 2015** and **70%** reduction by **2020**.



# The context - Social Housing CO<sub>2</sub> Footprint





# Further Pressure...National Drivers

- UK Gov't committed to reduce CO<sub>2</sub> emissions by **80% by 2050**
- **27%** of UK's CO<sub>2</sub> emissions come from Housing
- But... **80%** of homes that will exist in 2050 have already been built
- **332,000 (26%)** of households in Wales are in fuel poverty (2008)
- By **2025** WAG aims to generate twice as much renewable energy





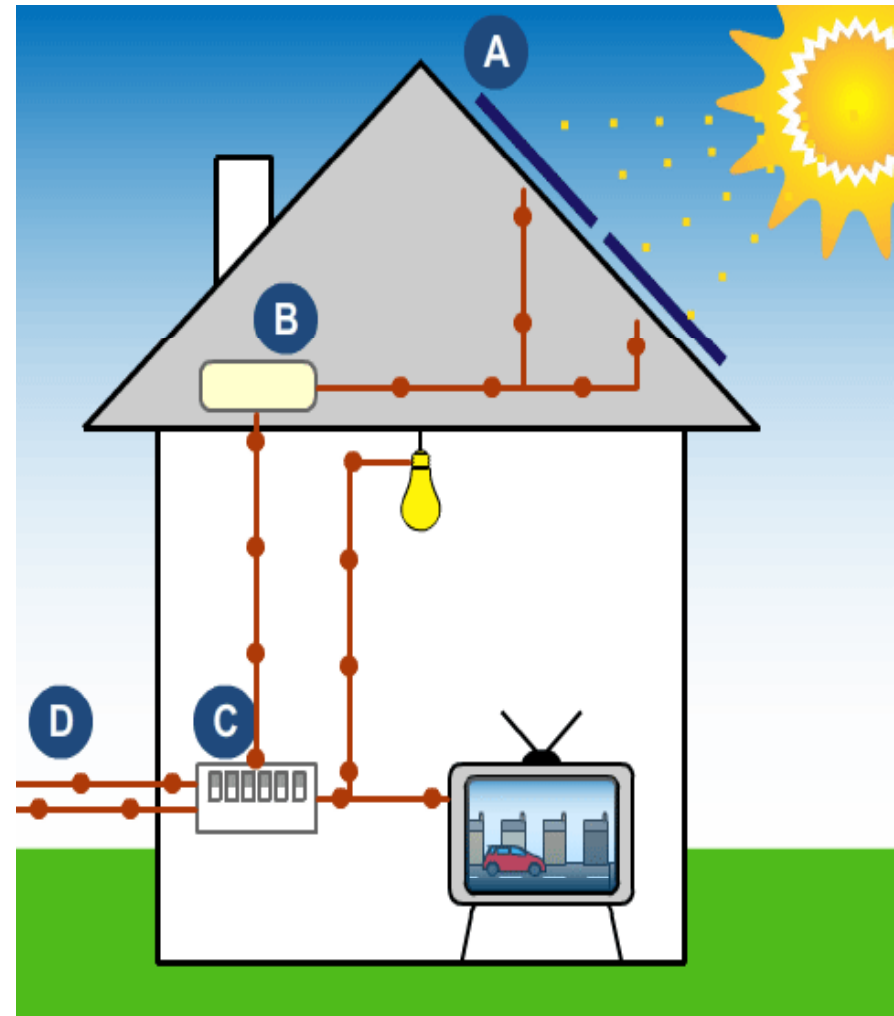
# What are Photovoltaic (PV) solar panels?

**A** - PV panels (on south facing roofs) will capture and convert the energy from the sun into electrical energy (direct current).

**B** – An inverter will convert the direct current into alternating current, to enable it to be used to power household appliances.

**C** – A generation meter will record how much electricity the PV panels have generated.

**D** – Excess electricity will be exported back to the national grid.





# Feed in Tariffs (FIT)

- New Government backed scheme to promote uptake of small scale renewable and carbon technologies (Microgeneration)
- Makes low carbon electricity generation financially viable by attaching an income to electricity generated and used and/or exported to the grid
- Applies to photovoltaic panels (PV), small scale wind turbines and micro CHP units
- Paid by Utility Companies NOT Government
- FITs payment designed to exceed cost of loan repayments for installation cost
- Tariffs linked to Retail Price Index
- Only installations by MCS Registered Installers using MCS Certified Products are eligible



# Project overview

- Installation of PV systems onto 3000 Council owned domestic and 13 non domestic buildings.
- Total Cost approx £28m
- Net surplus income approx £25m
- Installation complete by March 2013 (or sooner)
- 2011/12 and 2012/13 **1500** installations per year
- **30** installs per week (60?)
- **6** installs per day (12?)







# The Project - Non Domestic Buildings

- A minimum of 13 Council owned non domestic properties will also have PV installed.
- Ranging from schools, Council offices, Tennis centre etc....
- Additional bonus... Council benefits from reduced energy bills.
- Cost for this element of the project approx £3.4m, with a net income of £3m over 25 years
- 3% reduction in carbon footprint





# The Project – Domestic Buildings

- Wrexham has 11,500 Council owned domestic properties.
- Desk top survey completed to establish number of properties that are predominantly South facing.
- Findings..... **4500** properties are suitable.





# The Project in more detail



- On Site surveys now complete on 4500 suitable properties identified via desk top survey. This includes assessment of:
  - Condition of roof
  - Size of system that can be fitted
  - Tree coverage
  - Chimney stacks
  - Other obstacles
- Full surveys including asbestos and structural stability of properties will be carried out prior to installation.



## The Project in more detail – on site matrix

Roof Length	Roof Height	No of Panels	Size of system	FIT/Year	Import savings
8	2	9	1.5kw	<b>£520</b>	£82
7	3	12	2.2kw	<b>£733</b>	£113
8	3	14	2.5kw	<b>£856</b>	£135
8	4	16	2.8kw	<b>£925</b>	£146
8	5	21	3.8kw	<b>£1283</b>	£202



# Pilot Properties

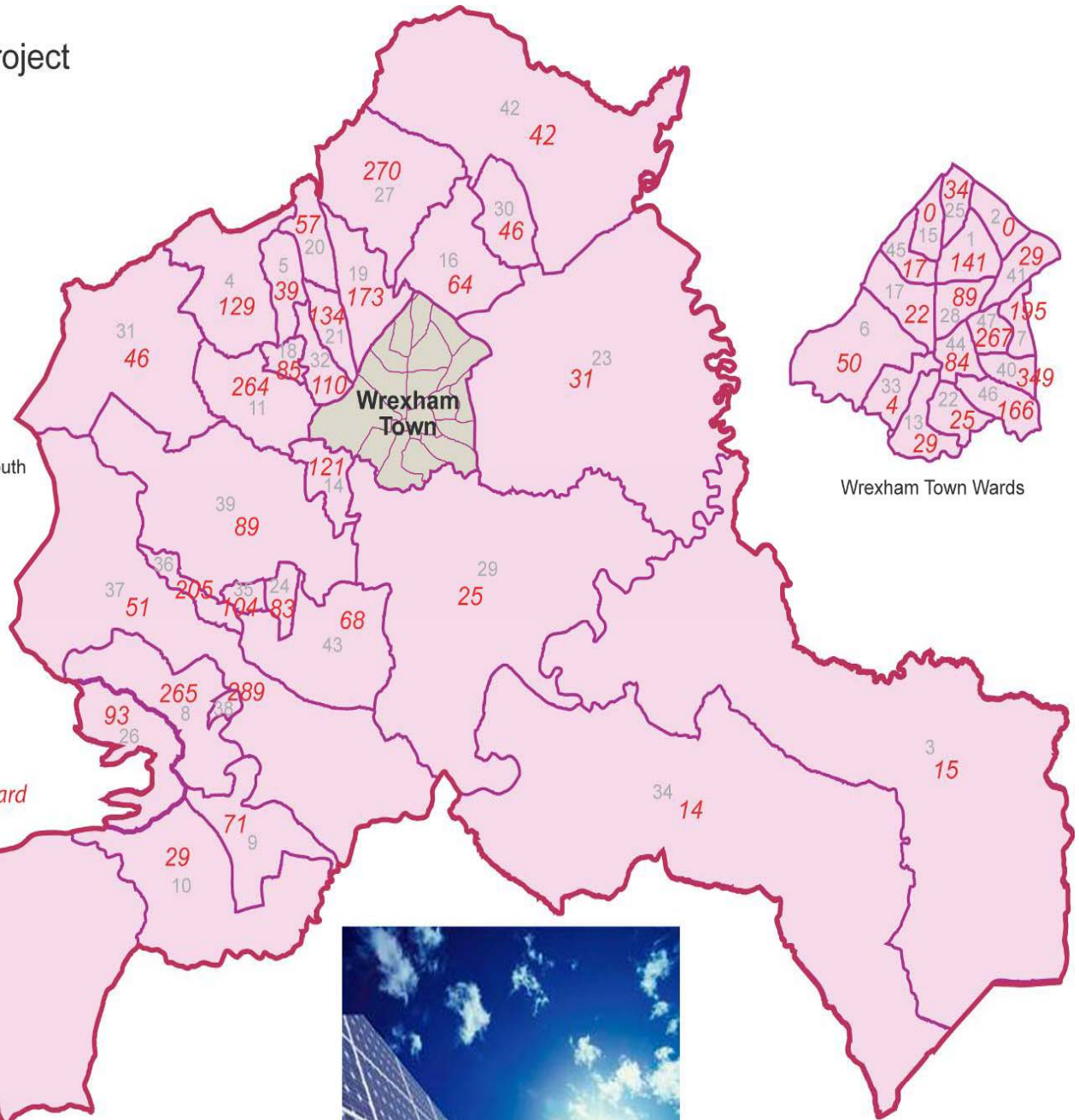
- Test feasibility of project and mitigate risks
- The process involved consulting with tenants, structural and asbestos surveys, procuring panels, arrange installation, draw up contracts, monitor productivity
- Outlying area of the Borough
- 5 properties to be completed by end March 2011



# Proposed Photo Voltaic Installation Project

## Wrexham County Borough Wards

- |                                   |                           |
|-----------------------------------|---------------------------|
| 1 Acton                           | 25 Little Acton           |
| 2 Borrass Park                    | 26 Llangollen Rural       |
| 3 Bronington                      | 27 Llay                   |
| 4 Brymbo                          | 28 Maesydre               |
| 5 Bryn Cefn                       | 29 Marchwiell             |
| 6 Brynyffynnon                    | 30 Marford & Hoseley      |
| 7 Cartrefle                       | 31 Minera                 |
| 8 Cefn                            | 32 New Broughton          |
| 9 Chirk North                     | 33 Offa                   |
| 10 Chirk South                    | 34 Overton                |
| 11 Coedpoeth                      | 35 Pant                   |
| 12 Dyffryn Ceiriog/Ceiriog Valley | 36 Penycae                |
| 13 Erddig                         | 37 Penycae & Ruabon South |
| 14 Esclusham                      | 38 Plas Madoc             |
| 15 Garden Village                 | 39 Ponciau                |
| 16 Gresford East & West           | 40 Queensway              |
| 17 Grosvenor                      | 41 Rhosnesni              |
| 18 Gwenfro                        | 42 Rossett                |
| 19 Gwersyllt East & South         | 43 Ruabon                 |
| 20 Gwersyllt North                | 44 Smithfield             |
| 21 Gwersyllt West                 | 45 Stansty                |
| 22 Hermitage                      | 46 Whitegate              |
| 23 Holt                           | 47 Wynnstay               |
| 24 Johnstown                      |                           |





# The Benefits

**WIN**

**WIN**

**WIN**



**ACT ON**  
**C**  **2**





# A further potential benefit.....

- Opportunity to upskill internal electricians to MCS standard, working with SHARP & Yale College
- Further opportunity to offer training courses to local electrical contractors
- Sell2Wales speculative market sounding notice – 40+ companies expressed interest
- PV awareness raising event – 24th November
- EST 0% loans to encourage local contractors to gain MCS accreditation

## Training & Development



**SHARP.**





# The 5 Big Issues

**Delivery options**



**Timescales**



**Risks**



**Procurement**



**Equalities**

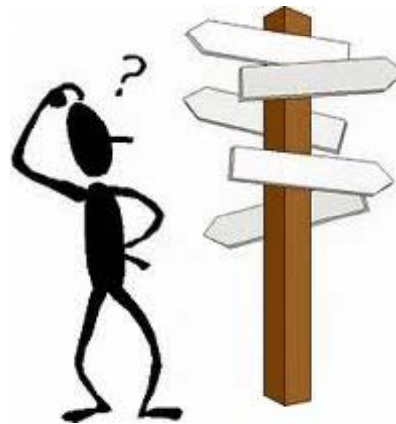




# Project Delivery Options



**1. Internally  
fund the  
design,  
supply and  
installation**



OR

**2. Engage  
external  
company to  
fund the  
design,  
supply and  
installation**



# Project Delivery Options

## Benefits of financing & managing the project internally

- **Full control**
- Ability to **claim all of the FIT** and maximise income generation for the authority
- Not reliant on external company
- Council has **full ownership** of all assets (roof and equipment)

## Limitations of financing & managing the project internally

- Significant financial **borrowing** required
- Insufficient internal capacity to manage project
- Insufficient expertise (legal/procurement) to deliver project
- Reduced likelihood of delivering project on time

## Benefits of engaging an external company to finance & manage the project

- **No financial commitment** required from the Council
- **Reduced risks** (risks sit with company)
- Limited internal resources required
- **More experience** in this field
- Potential quicker route to commence installations

## Limitations of engaging an external company to finance & manage the project

- **FIT is claimed by external provider** – missed opportunity.
- Success of the **project is reliant on external provider** – what if they can't deliver?
- **Loss of control**
- Council will still incur some resource costs – admin etc.
- External provider will complicate relationship between tenant and utility provider.
- **Issues of ownership** of assets



# Procurement Cont'd

## Option 1

### Manage & deliver procurement internally

Council to develop and manage the full tender process, incl evaluation & selection

## **Benefits**

Full control, incorporate specific requirements, not reliant on others

## **Weaknesses**

Few examples of this working well, time consuming, resource intensive, costly, require considerable support





# Procurement Cont'd

## Option 2

### Use alternative Procurement framework

Utilise one of the emerging OJEU compliant frameworks.

## **Benefits**

Expedience, reduced internal burden, OJEU compliant,

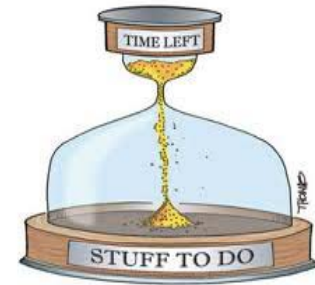
## **Weaknesses**

Little evidence of any current successful frameworks, dependant on framework operator.





# Timescales



**“Fast-track review to be launched into large scale solar installations”**

**“Solar projects below 50 kW and all other technologies should be 'safe' from tariff changes until April 2012 “**

**“FIT review to be complete by end of year. Tariff not to be changed until March 2012 at earliest”**

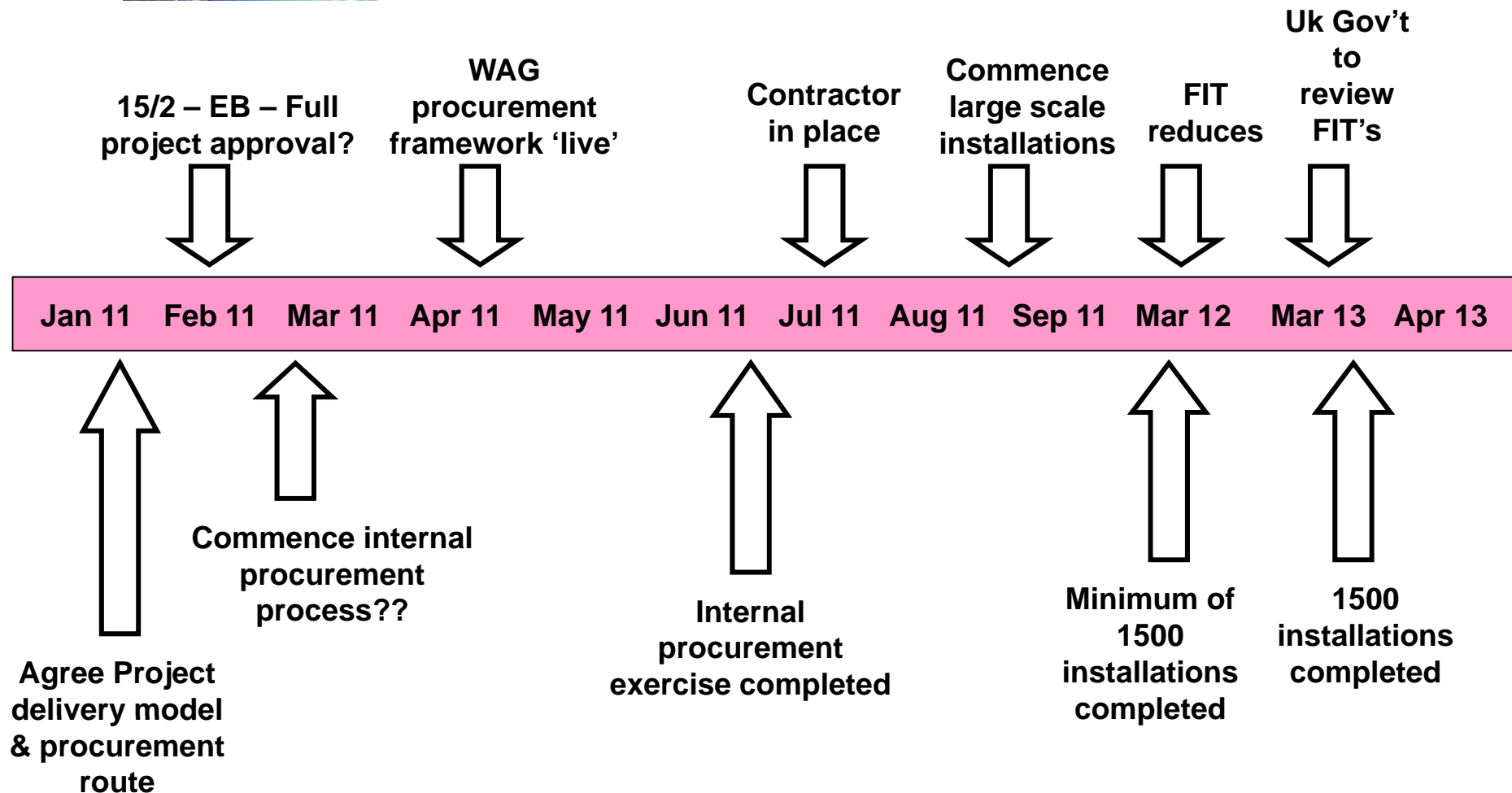
**“Large scale solar installations weren't anticipated under the FITs scheme”**

**“Window of opportunity”**





# Project Timeline





# Equalities

**Some 8000 tenants will not have PV installed!!**

**Is this fair?**



## **How can this be overcome?**

- Income generated can be recycled back into the Housing Revenue Account
- Consider other forms of renewables for those not having PV installed (air source heat pumps)
- Consider exploiting the RHI
- Install PV on East, West, facing properties





# Project Risks



## High Risks



- Delivery by March 2013 (or before) for maximum benefit from FITs
- Tenant & Member concern about equity of distribution
- Requires substantial funding approx £25 million
- Procurement UK Government change the FITs



# Project Risks



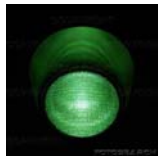
## Medium Risks



- Shortage of MCS accredited supply and installers
- Shortage of equipment
- FIT 'pot of money' runs out!
- Financial, technical, legal due diligence
- Condition of properties (structurally & asbestos)



# Project Risks



## Low Risks



- Equipment becomes superseded or is unreliable
- Internal capacity and expertise to deliver
- Property shading/obstacles
- Housing Stock Transfer & Right to buy applications
- Automatic Meters
- Planning permissions
- Vandalism



# Future Direction of project

Vast number of opportunities to expand and build on the project, if successful. Initial thoughts range from:

- Collaboration with other LA's and/or Public Sector Organisations
- Offer as a chargeable service to owner occupiers across Wrexham
- Install PV onto Non South Facing properties
- Consider installations onto Community centres etc





## Next steps



- 4 more pilot installations to be completed by March 2011
- Continue on site surveys to firm up potential properties and non domestic buildings that are suitable
- Firm up financial modelling and technical specification
- Manage expectations
- Consultation & Engagement