

**SOLAR POWER  
IS COMING  
TO WREXHAM!**





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**Predictions are very difficult; especially  
about the future!**



# GOVERNMENT POLICY

**Floundering with a large degree of  
pointlessness!**







# Wrexham's Green Credentials.....

2008

- Low investment
- Energy inefficient property portfolio
- Small Renewables budget
- Other Priorities (WHQS)
- Carbon Reduction not corporately significant

2014

- Largest domestic solar PV scheme in UK
- Commercial PV delivered
- Carbon Trust Standard
- High performing Welsh LA in CRC league table
- Established a recycling annual invest to save budget
- Annual renewable budget
- £4m CESP funding levered in
- ECO Procurement framework
- 3 MW solar farm
- Exploring RHI opportunities



# Our solar journey.... Conditions for success

- Senior Buy in
- Strategic Priority
- Ambition & Drive
- Innovation & Creativity
- Circumstances / Fortune
- Strong Project Management ethos
- Sound Business Case development
- Prepared to take risks / Holding our nerve!
- Common sense
- The right people!

*In the midst of massive FIT uncertainty*

*Above not normally synonymous with LA's*

*Set against a backdrop of worst economic downturn in living memory*



# Project particulars.....

<b>2600+ Houses</b>	<b>175 flats</b>	<b>4.5+ MW</b>
<b>8.2 average no of panels</b>	<b>25,000+ panels fitted</b>	
<b>Up to 3000 tonnes of CO2</b>	<b>Completed in just 190 days</b>	
<b>Over 8000 tenants</b>	<b>£350k + electricity savings for tenants</b>	
<b>63 People employed locally (45%)</b>	<b>All panels made in Wrexham</b>	
<b>£400k surplus expected in 2014/15</b>	<b>Saving up to £100 per year</b>	
<b>Up to £10k FIT income per day</b>	<b>£15m surplus FIT income over 25 yrs</b>	



## Summarising the benefits

### The environment

Up to 3000 tonnes of CO2 saved pa

### The Council

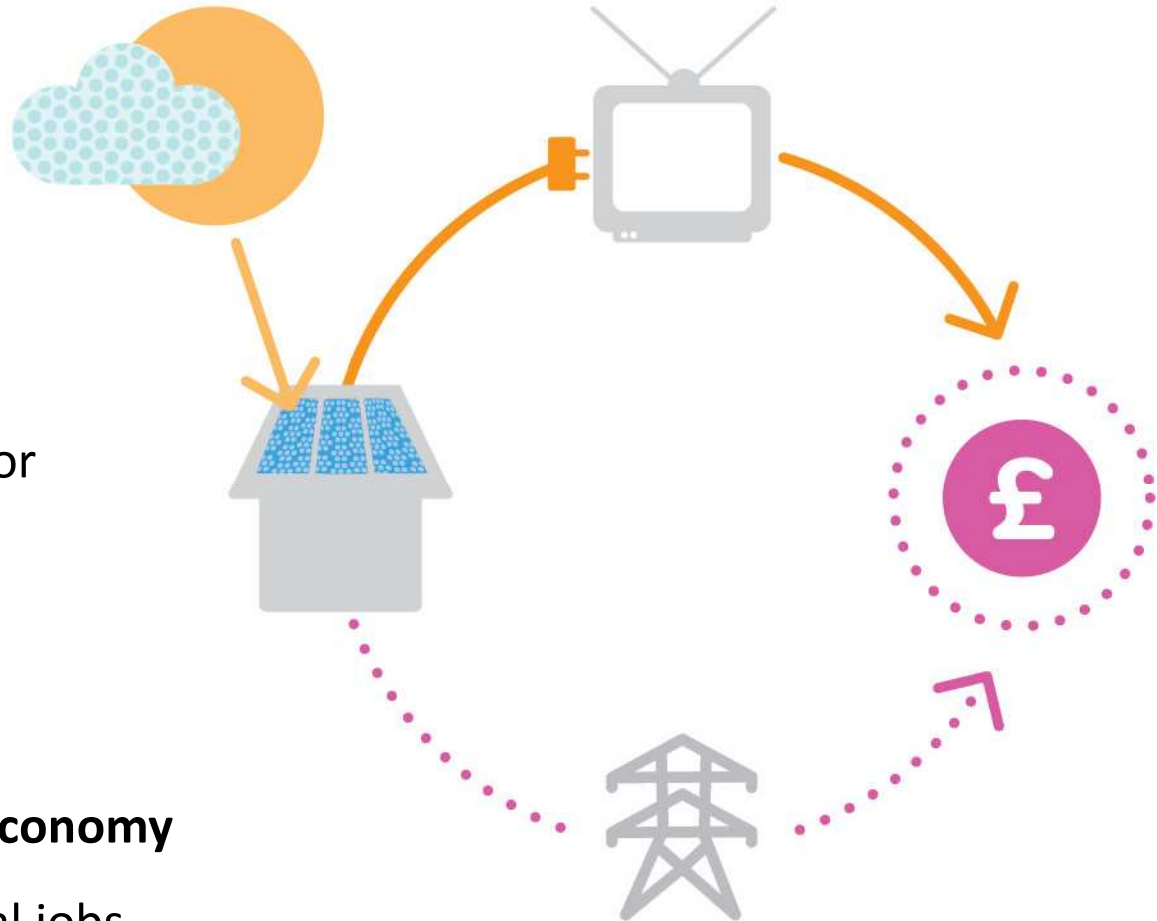
Up to £700,000 income pa for 25 yrs. Also reputation

### The tenant

£100 - £300 pa saving

### The economy

Local jobs, training, skills etc



# Stimulating the local economy & supply chains

- 47% of workforce recruited locally
- 75 people (jobs)



Panel installers x 15



Admin / TLO x 9



Electricians x 20



Local scaffold companies x 5



Warehouse staff x 10



Plus – panels sourced locally





# What else went well....?

- On time (almost)
- Under budget
- Putting Wrexham on the map / reputation
- Well received by tenants (buy in)
- Procurement
- Outcome of FIT review
- Partnership working
- Local employment
- Communications
- Weather
- Health & Safety



# Not everything went to plan....



*What do you  
want from a  
Solar Scheme?*



# Wrexham Solar Farm Berthengron Farm, Legacy, Nr. Rhosllanerchrugog



[www.wrexham.gov.uk](http://www.wrexham.gov.uk) / [www.wreccsam.gov.uk](http://www.wreccsam.gov.uk)



# Background

- Carbon reduction and energy efficiency has been a council priority since 2008
- Build on the success of previous carbon reduction projects.

## Domestic PV

- Largest Social Housing Solar PV scheme in Europe
- 2700+ properties retrofitted with PV.

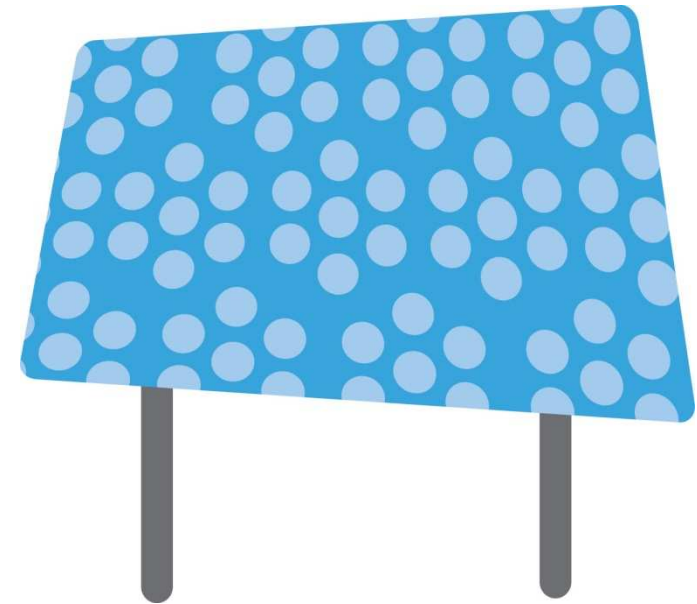


## Schools PV

- 15 Schools and 2 commercial buildings retrofitted with PV. This is an installation of almost 0.3Mwp

# Why a Solar Farm?

- Building on Wrexham's reputation for delivering large scale solar PV projects
- Innovative use of Council owned assets for securing long term income generation
- Reducing Wrexham's Carbon Footprint
- Reduced equipment costs for solar Installations
- Generation of Green Energy
- Income Generation
- Community Leadership



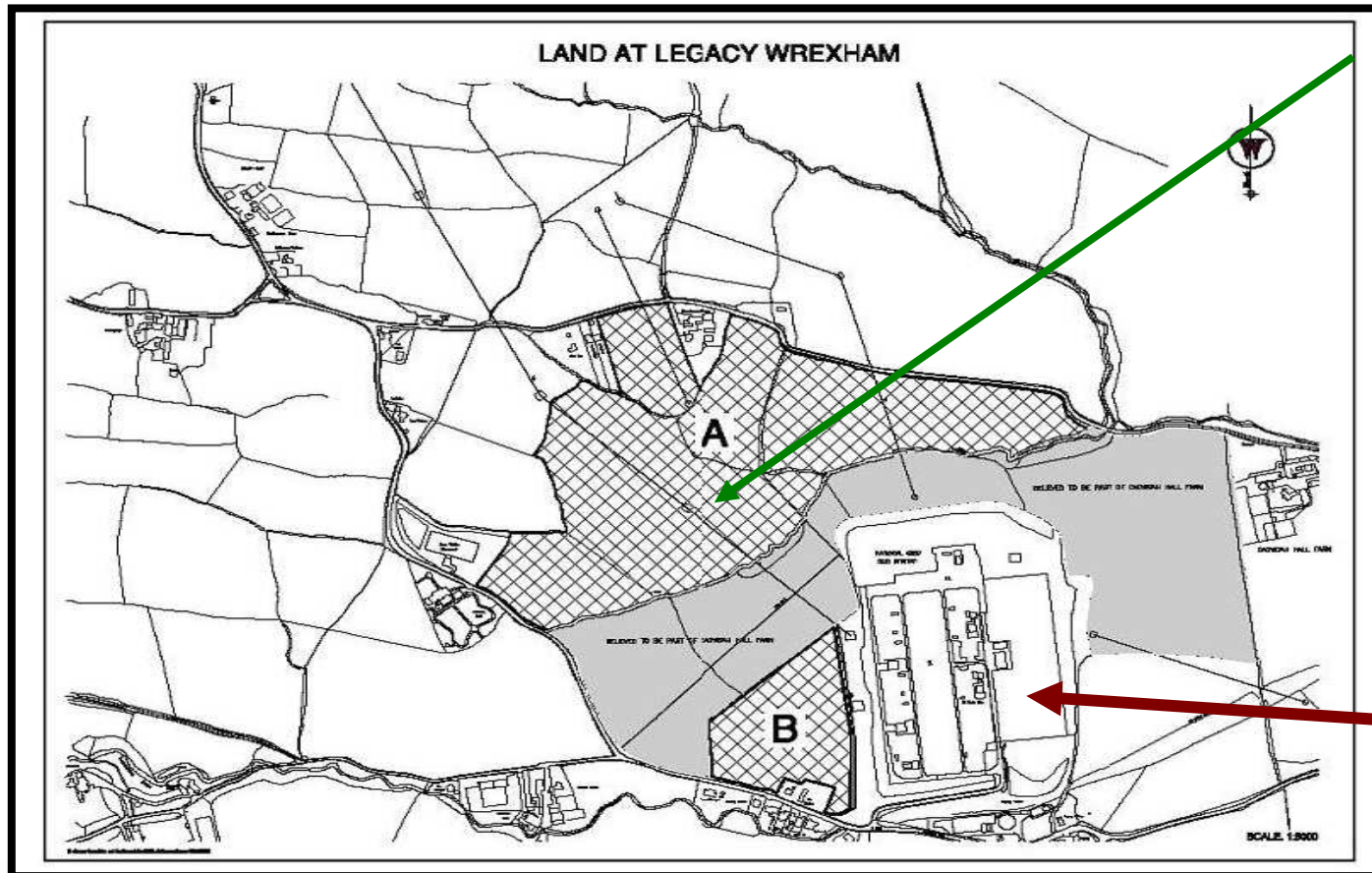
# Wrexham's Solar Ambitions

- To establish a procurement framework to permit the delivery of multiple land based solar schemes
- 43.1 acre site of council owned land
- Proposed 5MW solar farm based on land close to the National Grid substation
- Planned 12,000-15,000 PV modules
- Site to retain agricultural use
- Good connectivity to the grid
- Favourable site topography



# Site Map

Plot A and B:  
Council owned  
land



Legacy  
Substation

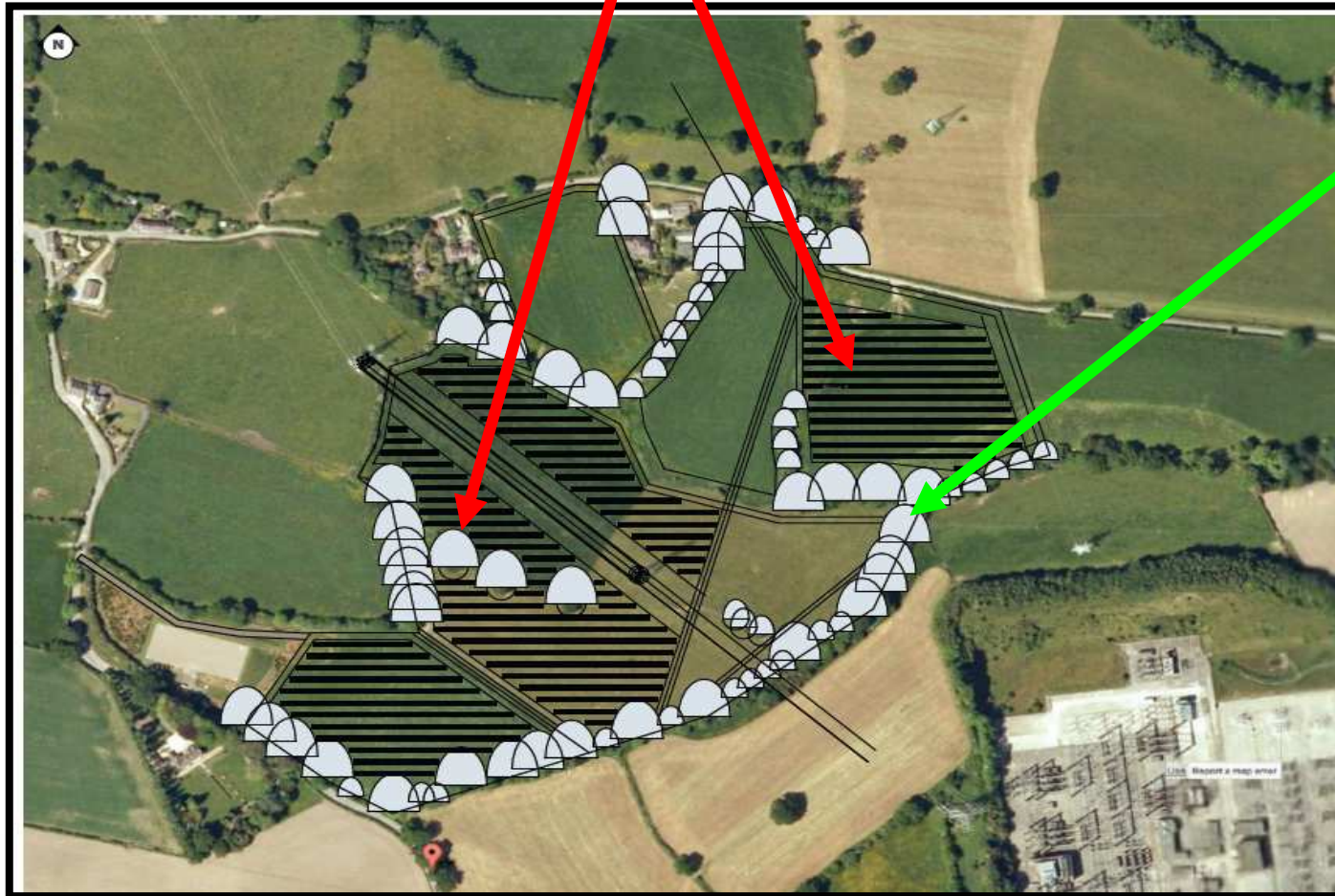
# Preliminary Works

- Prior to work commencing on site a number of processes needed to be completed, these included:
  - Obtaining grid connection agreement with Scottish Power
  - Commission the indicative Design and layout of site to support planning application
  - Establish a procurement framework to appoint contractor
  - Planning application was required. The following main assessments and studies were included in the planning application process:
    - Ecological study
    - Landscape and visual assessment
    - Transport management plan

# Site Map

Proposed areas for development:  
Location of panels

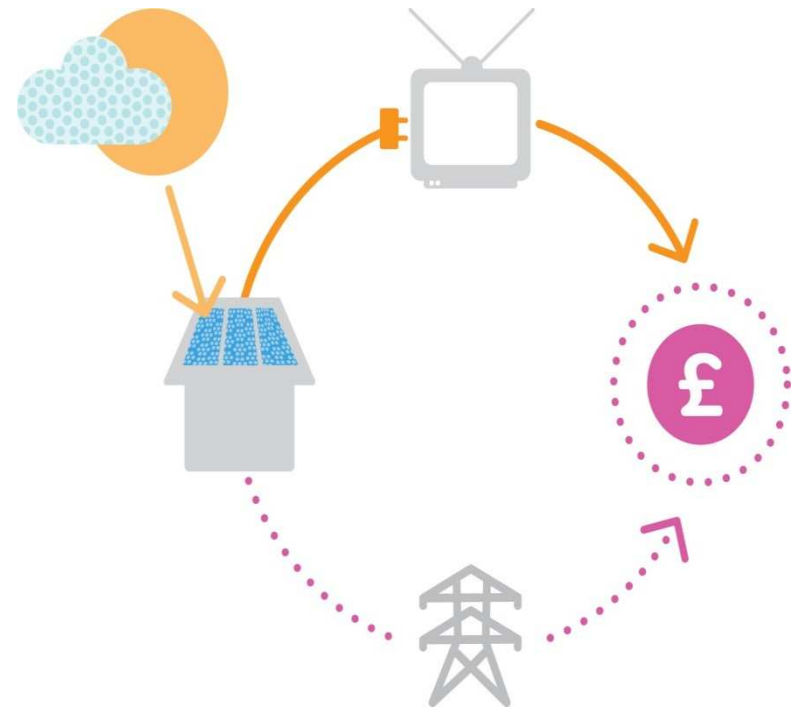
Half moon sections,  
indicate areas of  
potential  
shading due to  
hedgerows and  
trees



Direction  
of Solar  
Panels

# Developing a Solar Farm

- Tenders were issued out before planning permission was granted;
- LPA/Planning Committee postponed the decision and requested site visit;
- Once planning application granted the contract was awarded to British Gas
- Work commenced on site in January 2015
- Scottish Power witness tested the scheme on the 14<sup>th</sup> May



# Lessons Learnt

- Construct a solar farm during the summer months to ensure that poor weather conditions do not affect the deadlines for the scheme
- Start early discussions with the DNO and LPA
- Apply for connection at the early stage
- Sign PPA agreement before you commence construction phase
- Ensure that the grid connection points are on land owned by the local authority and not in third party ownership
- Make sure Community Benefits are agreed before project is approved
- Project/Contract management is a full time job!

# Lessons Learnt

- Project/Contract management is a full time job!
- Planning and connection offer to be incorporated into the contract
- Make sure all demands from the DNO are met/agreed with the contractor at the beginning of the contract
- Create OFGEM application early and keep chasing them
- When the construction phase starts approach MOP and Electricity Supplier so you can get meters installed in advance of the system energisation
- Keep chasing legal: wayleaves, easements and internal legal department
- Follow up changes with project Manager, Planning and DNO

# Opening the Solar Farm

- The Legacy Solar farm was officially opened by Wrexham Councils Mayoress on the 17<sup>th</sup> June 2015
- The scheme will provide the Council with an income stream (£2.5M) for the next 25 years and is projected to generate over 57m kWh green electricity





## Welcome to the Wrexham Legacy Solar Farm

This farm generates clean electricity which feeds into the National Grid to power the equivalent of 700 homes.

System size:	2.64MWp
No. of solar panels:	8,880
Elec. Generation/year:	2,342 MWh
CO <sub>2</sub> emission/year savings:	1,272 tonnes

It started to generate green electricity in May 2015. It is the first solar farm owned by Wrexham County Borough Council and the first in Wales to be owned and operated by a local authority.

The farm was installed by British Gas

## Croeso i Wrecsam Etifeddiaeth Solar Fferm

Mae'r fferm yn cynhyrchu trydan glân sy'n bwydo i mewn Grid Cenedlaethol i bweru gyfwerth â 700 o gartrefi.

Maint y system:	2.64MWp
Nifer y paneli solar:	8,880
Trydan canhedlaeth / bliwyddyn:	2,342 MWh
Arbedion CO <sub>2</sub> :	1,272 tunelli

Mae wedi dechrau i gynhyrchu trydan gwyrdd Mai 2015 ac roedd y fferm solar cyntaf eiddo ac a weithredir gan Awdurdod Lleol yng Nghymru.

Mae'r fferm solar yn eiddo ac a weithredir gan Wrecsam Roedd Cyngor Bwrdeistref Sirol a'u gosod gan Nwy Prydain.

