DELIVERING

..... Local Authority Projects

26TH February 2015

John Harrison
Managing Director of Blue Sky Peterborough Limited and
Executive Director, Resources for Peterborough City Council

THE ENERGY JOURNEY

UK Environment City

to

UK Environment Capital

Energy Strategy

The Peterborough approach:-

- Generate Renewable Energy
- Reduce Energy Consumption
- Enable regeneration
- Reduce carbon
- AND:
- Get financial benefits to the city
- AND LAST BUT NOT LEAST!!!
- Make and save money!

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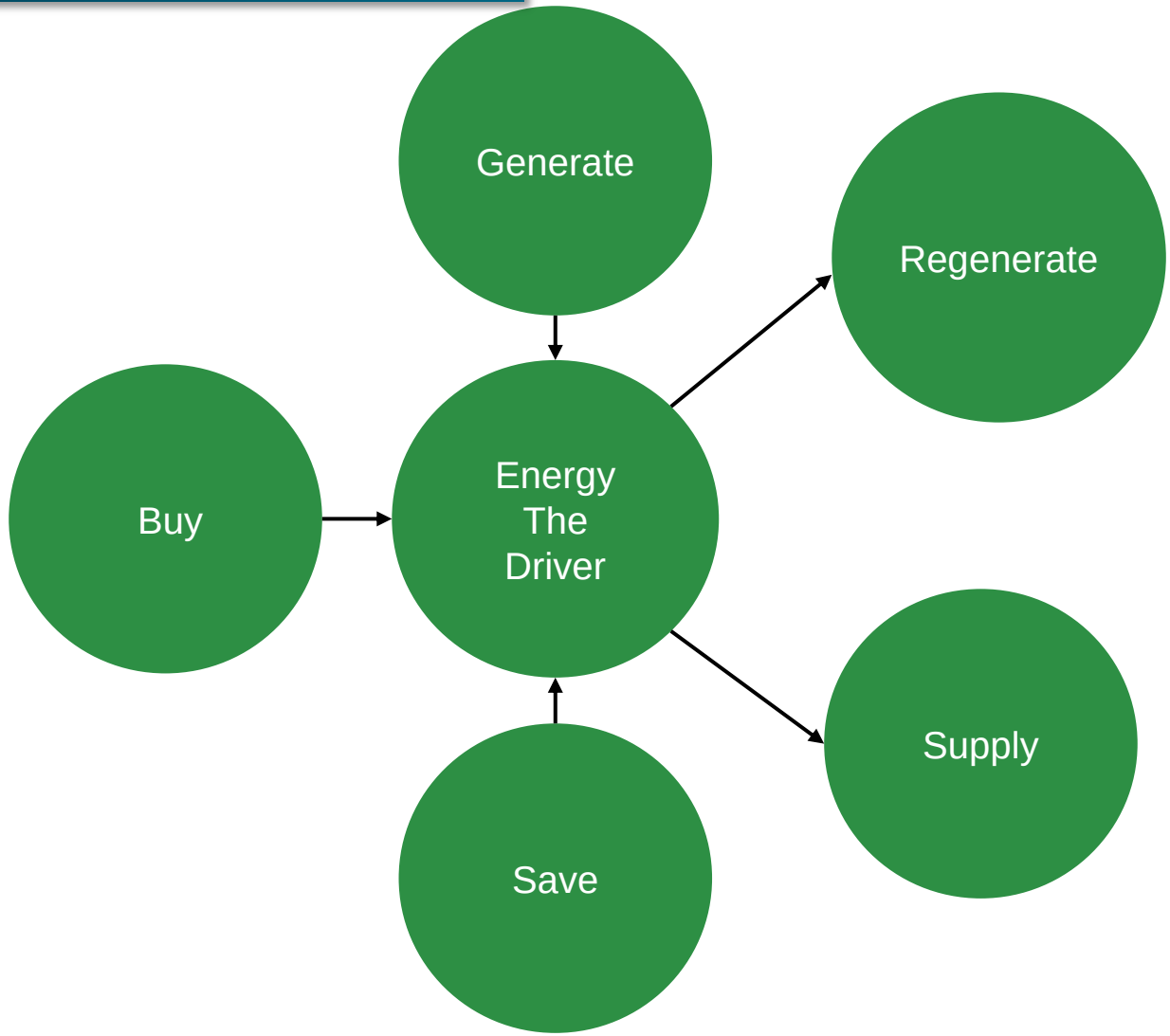
Energy : The drivers for the Council



Procurement issues – SORTED!

Pinsent Masons

- Our suppliers are either procured through OJEU procurements or do not require procurement and all are open to other local authorities across the UK
- **Honeywell**:
  - Peterborough City Council procured as Central Purchasing Organisation
- **Mears**:
  - Ability to install on LA and other roofs across the UK
  - Ability to install ground mount PV
- **Ichoosr**:
  - Collective Switching
- **Mark Group & EON**
  - Green Deal Providers, External Wall Insulation Installers & ECO Funders
- Our advisor contracts with **Pinsent Mason, EC Harris and Deloittes** were procured through the Crown Commercial Services (CCS) Frameworks
  - Full understanding of issues surrounding setting an ESCo up

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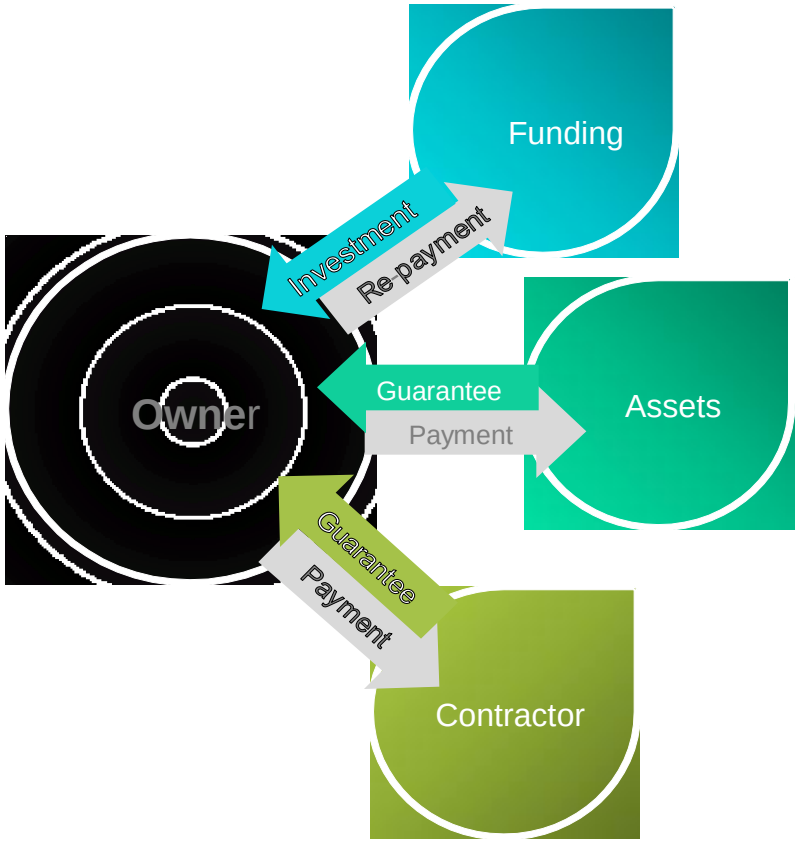
Procurement issues – SORTED!

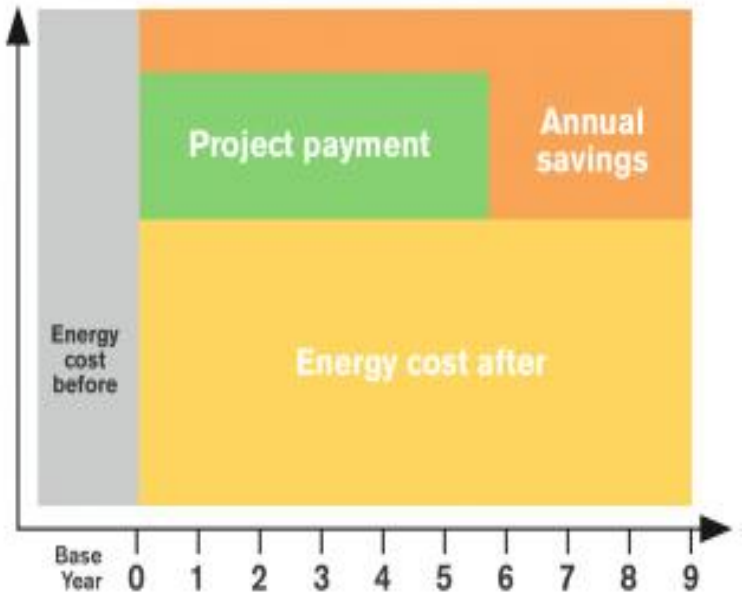
Pinsent Masons

- **Empower**
  - Free Private Residential Solar PV
  - First scheme of it's kind in the UK
- **Ovo Community**
  - Local Community Tariffs for Dual Fuel, Single Fuel (Electricity) and Pre-Pay Meters
- **AVIC International Corporation (UK) Ltd**
  - Energy and Regeneration

What is an energy performance contract?

Honeywell





Capital investment paid out of guaranteed energy savings

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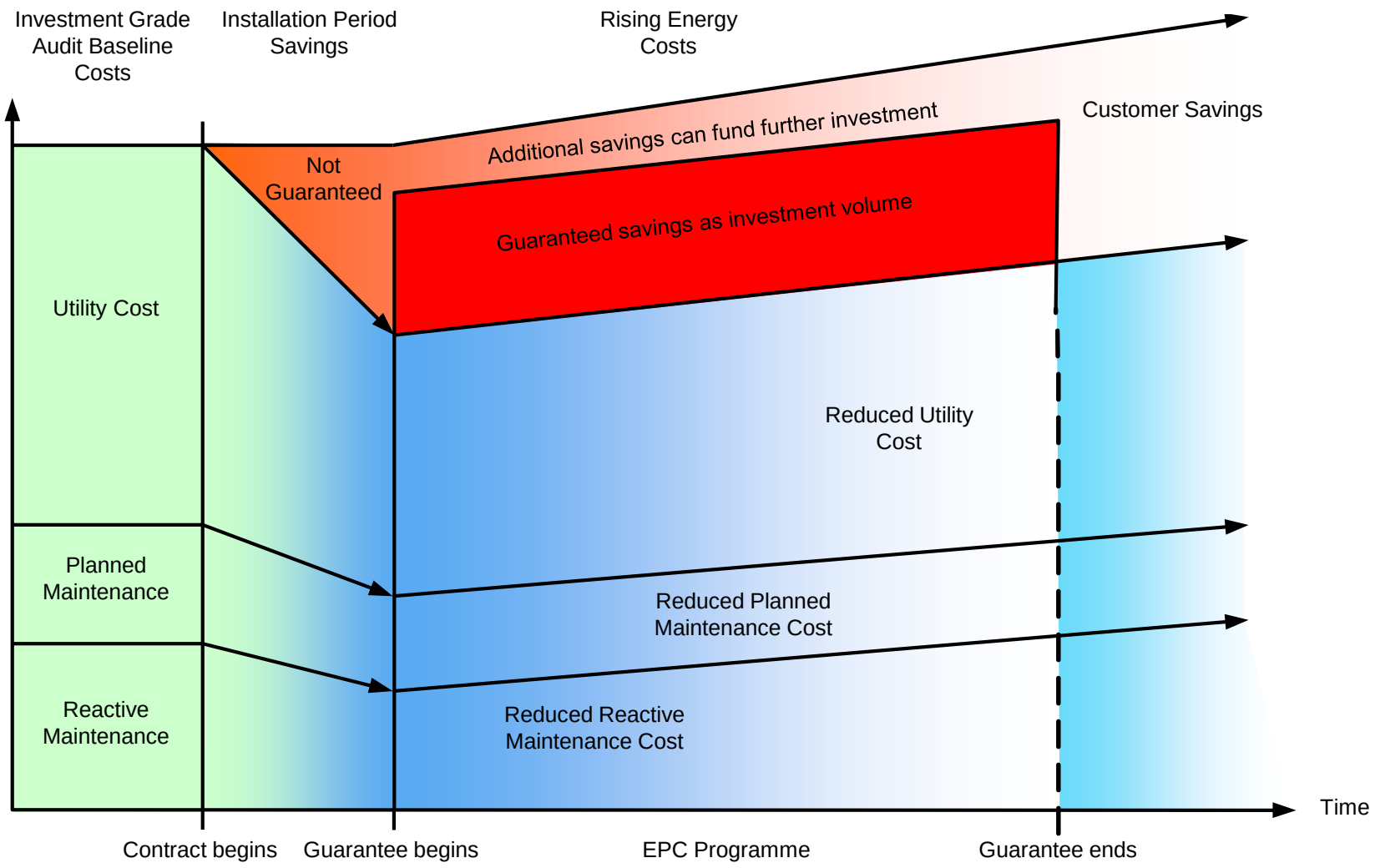
Where do savings come from?



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Honeywell
MEARS PROJECTS Making People Smile
Pinsent Masons
EC HARRIS BUILT ASSET CONSULTANCY AN ARCADIS COMPANY
CityFibre
Deloitte.
Blue Sky Green Energy

How was Honeywell procured?

Honeywell

- Focus on testing "accepted wisdom"
- Defining industry starting approach
- Open invitation
- 18 responses received

- Focus on covenant strength, previous experience and appropriate scale
- Open invitation
- 13 responses received

- Responders asked to outline their approach to legal, technical and financial delivery
- 6 invited to respond

- Practical test, with sample portfolio of 5 buildings
- Assessed on financial return and overall quality
- 4 invited to respond

- Final practical test, sample portfolio of 25 building, including 15 schools
- Focus on creating LA and school specific solution
- 2 invited to respond

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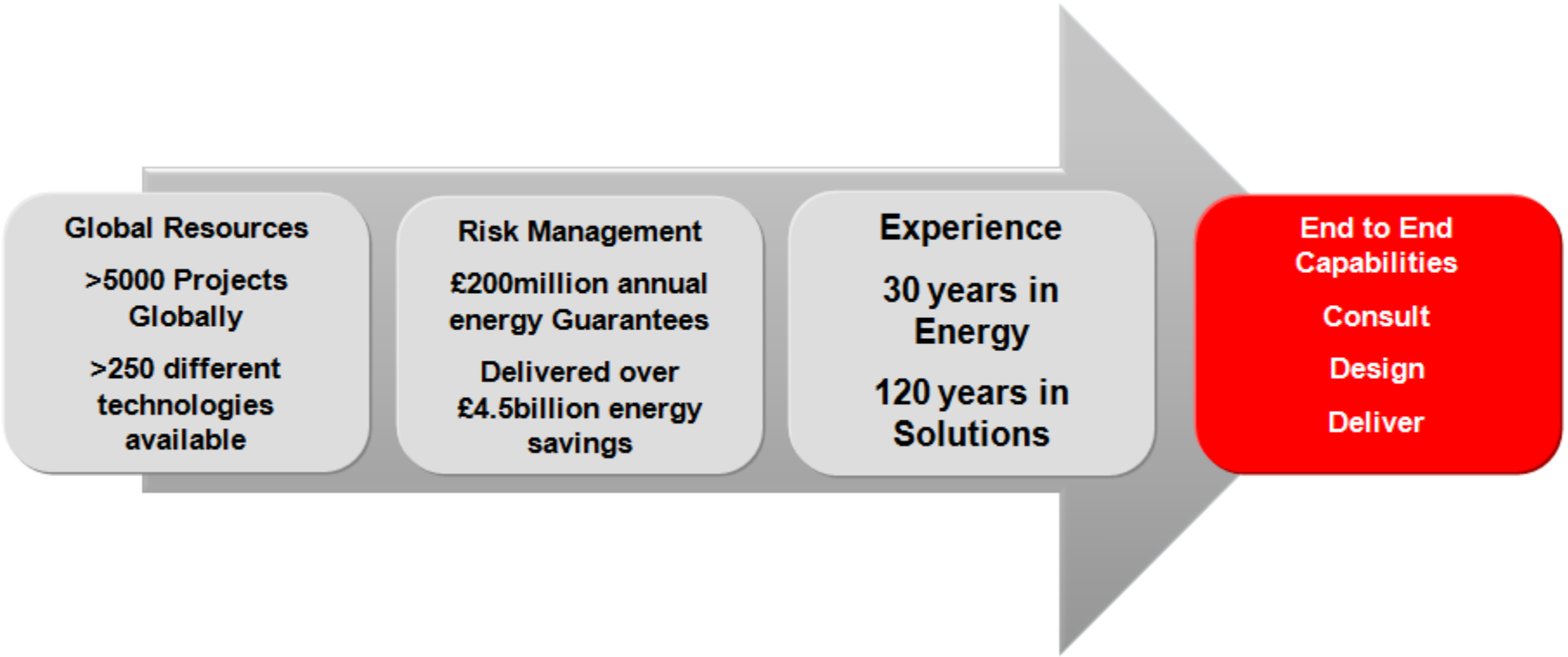
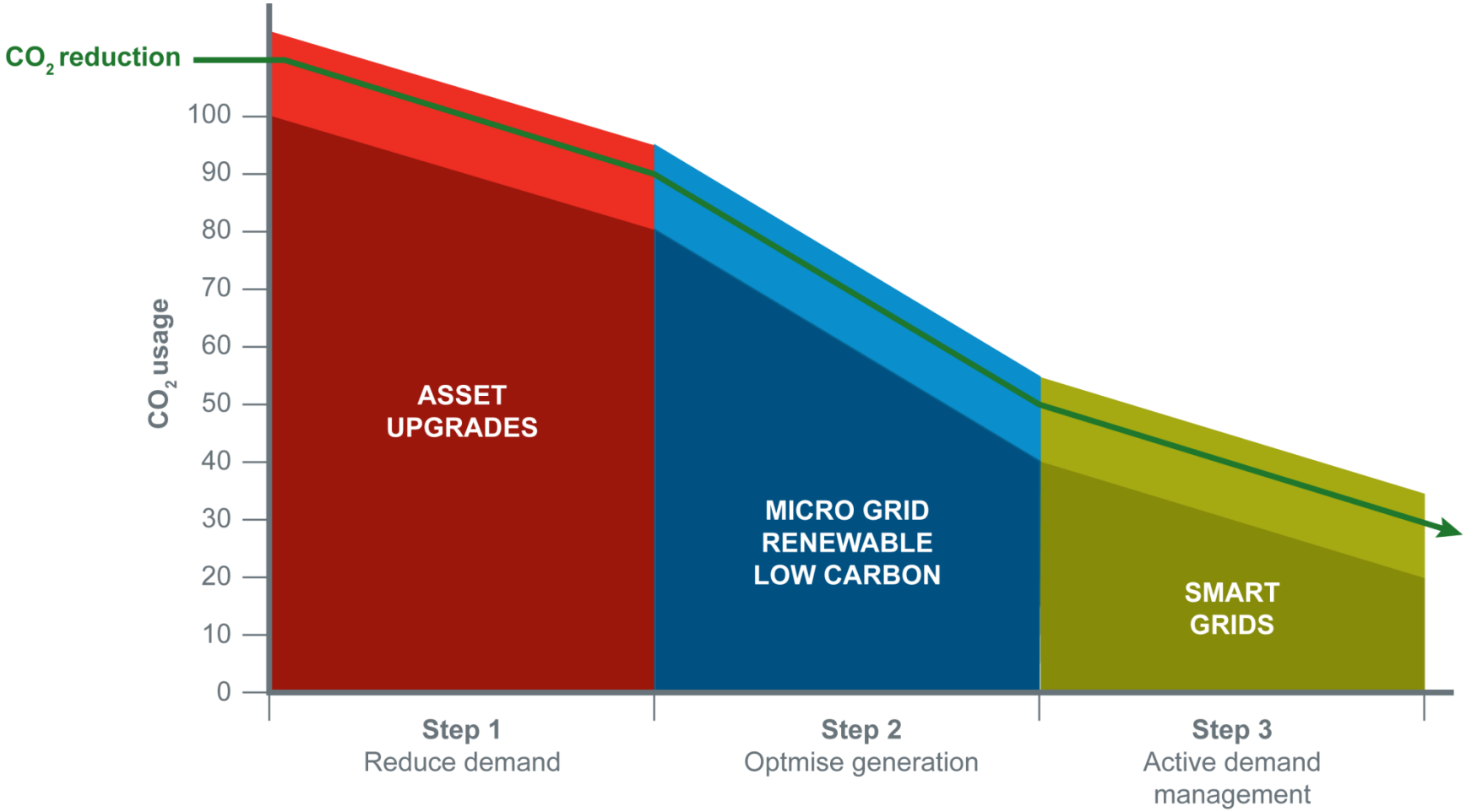
Who are Honeywell?

Honeywell first introduced the concept of funding energy projects through saving guarantees in 1979 - under a grant from the U.S. Department of Energy to develop strategies for reducing energy consumption in buildings



Honeywell's Low Carbon Roadmap



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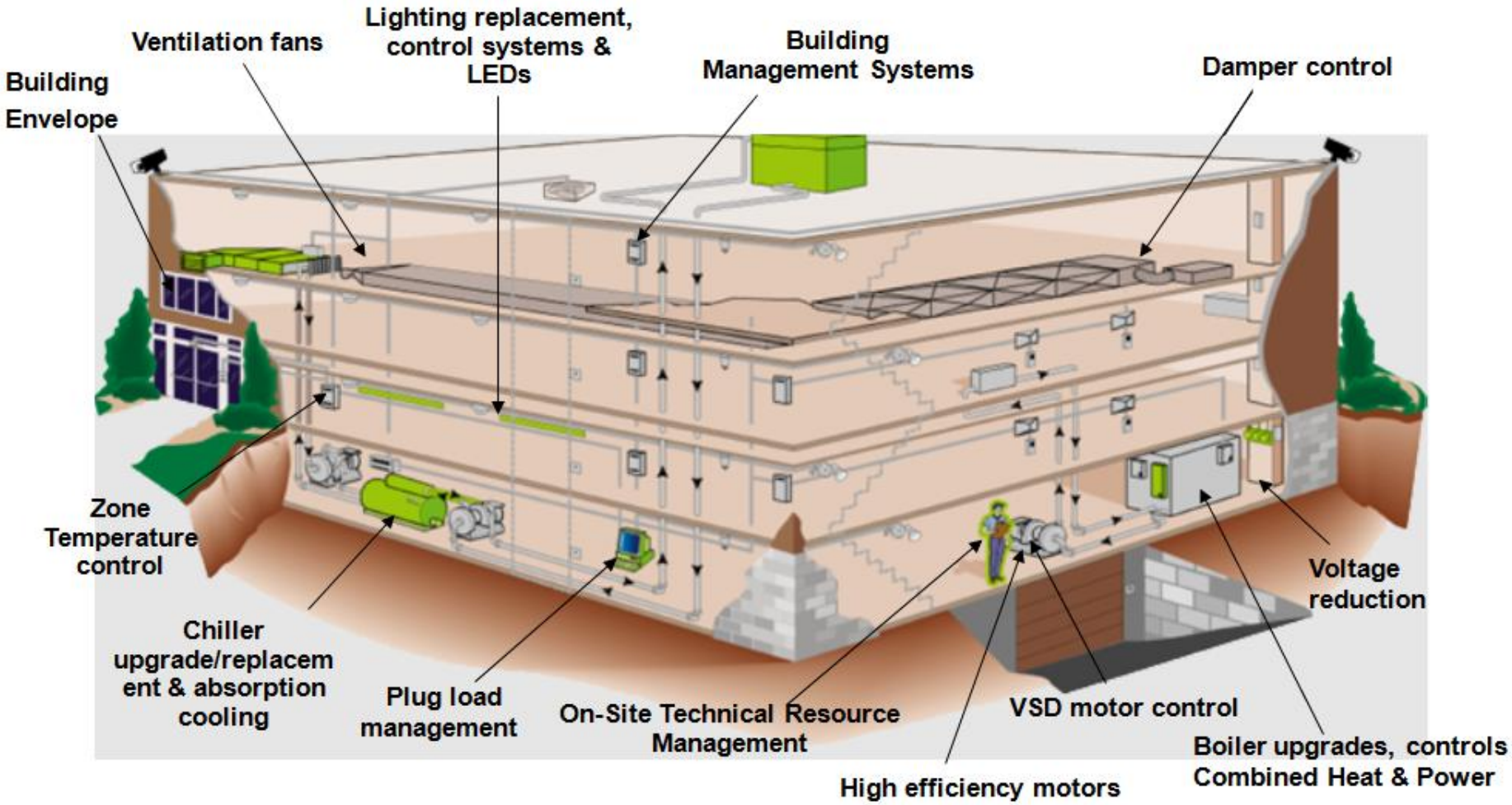
Honeywell's Technologies



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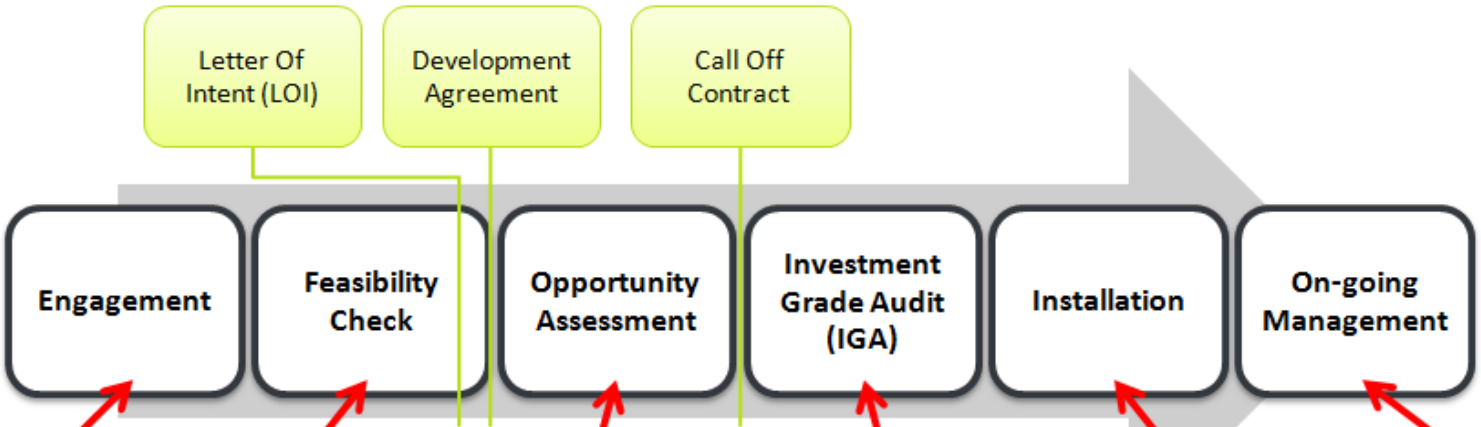
How does it all work?



- Initial explanation of contract
- Introduction to Honeywell
- May include some high level assessment of feasibility

- High level commitment gate to determine if both sides see an opportunity
- Letter of Intent commits Authority to paying access fee if they pull out prior to entry into Call Off Contract

- Undertaken at Honeywell risk and cost
- Defines the size of opportunity, programme and timescales.
- Honeywell held to Savings identified at Opportunity Assessment ± 15% (tolerance range)

- Confirms OA findings
- Confirms funding
- Only if Investment Grade Audit (IGA) results fall within tolerance range and Authority withdraws, IGA costs are payable (by the Authority)
- If Authority accepts IGA , the cost of IGA is wrapped into cost of funding

- Technical Design is completed
- ECMs are installed
- Practical Completion testing is undertaken
- Energy Saving Guarantee Period begins

- Operation & Maintenance
- Measurement and Verification
- Billing
- Continuous Improvement

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Phase 1 intervention - The Works

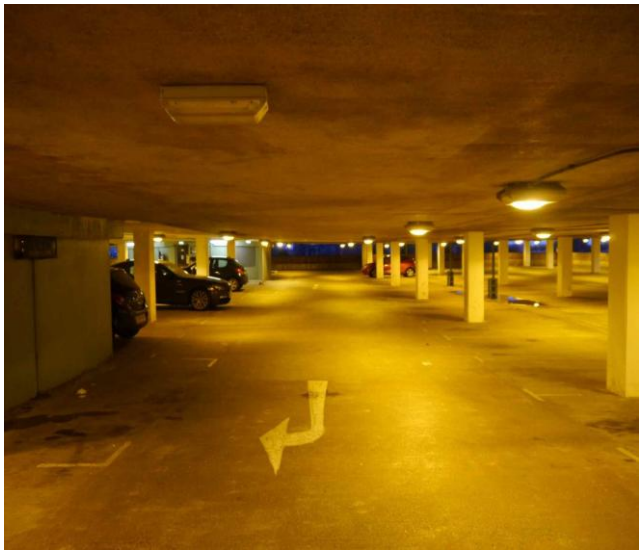
	Lighting	Pool Cover	Air Handing Plant	Act Earth	Pool Filters	BMS Controls	Insulation
Phase 1							
Regional Pool ECM (15 year)	Y	Y	Y	Y	Y	Y	Y
Jack Hunt Swimming Pool (15 year)	Y	Y			Y	Y	Y
Town Hall - Civic Areas (15 year)	Y			Y		Y	Y
Multi Storey Car Park (6 year)	Y						
City Market (6 year)	Y						
Central Library (6 year)	Y			Y		Y	Y
Bushfield Sport Centre (15 year)	Y			Y		Y	Y
Lido – Outdoor Pool (15 Year)					Y		

Act Earth – This is a training program to educate staff on saving energy.

BMS Controls – Building Management Controls – i.e boilers and heating controls.

Phase 1 intervention - Before & After Photos

Honeywell



Car Park Assessment – 6 years		
ITEM	UNIT	VALUE
Overall project cost	£	369,000
Total energy savings	£	388,000
Total Operating Savings	£	41,000
NET POSITION (+/-)	£	60,000

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Phase 2 intervention - The Works

	Lighting	CHP	Air Handing Plant	Act Earth	Boilers	BMS Controls	Insulation
Phase 2							
Regional Pool CHP (15 year)		Y				Y	
YMCA (15 year)				Y	Y	Y	Y

Act Earth – This is a training program to educate staff on saving energy.

BMS Controls – Building Management Controls – i.e boilers and heating controls.

Phase 2 intervention - CHP

CHP Assessment		
ITEM	UNIT	VALUE
Contract Sum	£	323,000
Life Time Operating Costs	£	488,000
Guaranteed Energy Savings	£	986,000
NET POSITION (+/-)	£	175,000

Phase 3 intervention - Schools Works

Honeywell

	Lighting	Act Earth	Boilers	BMS Controls	Insulation
Sacred Heart RC Primary School	X	X		X	X
Watergall Primary School	X	X		X	X
Parnwell Primary School	X	X	X	X	X
Welbourne Primary School	X	X		X	X
Honeyhill Centre PRS (Secondary)	X	X	X	X	X
Abbotsmede Community Primary School	X	X	X	X	X
Gunthorpe Primary School	X	X		X	X
Castor C of E Primary School	X	X		X	X
Winyates Primary School	X	X		X	X
Heltwate School	X	X		X	X
Leighton Primary School	X	X		X	X
Middleton Primary School	X	X		X	X
Old Fletton Primary School	X	X		X	X
Caverstede Early Years Centre	X	X		X	X
The Beeches Primary School	X	X		X	X
Oakdale Primary School	X	X		X	X
Paston Ridings Primary School	X	X		X	X
The Duke of Bedford Primary School	X	X		X	X
Marshfields	X	X		X	X
Norwood Primary School	X	X		X	X
Braybrook Primary School	X	X		X	X
John Clare Primary School	X	X		X	X
Wittering Primary School	X	X		X	X

Act Earth – This is a training program to educate staff on saving energy.
BMS Controls – Building Management Controls – i.e boilers and heating controls.

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Overall Financial Summary – All Phases

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
Number Of Sites	8	2	23	8	11	
Type Of Sites	Leisure / Admin Offices / Multi Storey Car Parks	YMCA (Theatre) & Swimming Pool	Schools	Schools - Solar	Schools ECM	
Costs						
Capital Investment	£2.0m	£0.6m	£1.174m	£0.5m	£0.36m	
Operational Costs	£1.3m	£0.5m	£0.093m	£0.71m	£0.22m	
Total Cost	**£3.3m**	**£1.1m**	**£1.267m**	**£1.21m**	**£0.58m**	**£7.457m**
Savings Over The Contract						
Revenue	£3.0m	£1.4m	£1.532m	£1.41m	£0.63m	
Capital Avoidance	£2.0m	£0.1m	£0.0m	£0.0m	£0.0m	
Total Savings	**£5.0m**	**£1.5m**	**£1.532m**	**£1.41m**	**£0.63m**	**£10.072m**
NET SAVING:	**£1.7m**	**£0.4m**	**£0.265m**	**£0.2m**	**£0.05m**	**£2.615m**
ANNUAL CO2 SAVING –TONNES	**895**	**528**	**368**	**85**	**176**	**2052**

Energy Upside – Corporate

Honeywell

	Savings Per Annum
6 Year Interventions	
80% - 100%	£23,366
From Year 7 No guaranteed (Intervention paid off	£84,485
15 Year intervention	
80% - 100%	£45,966
From Year 16 No guaranteed	£268,348
Total Saving 1 to 6 (per annum)	£69,332
Total Savings 7-15 (per annum)	£130,451
CRC Savings from 2019/20	£280,000

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Asset Upgrade - Energy Upside – Schools

	Savings Per Annum
15 Year intervention	
80% - 100%	£44,650
From Year 16 No guaranteed	£223,250

Energy Efficiency Summary – Unitary Council

Scope

33 Schools, 3 Swimming Pools, Sports Centre, Multi Storey Car Park, Library, Market and Town Hall

Costs

Capital Investment £4.6 m
Operational & Funding Costs £2.8 m
Total Cost £7.4 m

Less

Savings at 80% £7.9 m
Cost Savings & Cost Avoidance £2.1 m
CO2 Saving 2052 Tonnes
Net Profit £2.6 m

Add

Energy Upside Year 1 to 6 £0.7 m
CO2 Savings upside, 80-100% 513 Tonnes, CRC Saving upside saving £40K
CRC Savings 2019/20 £280K
(80-100%) Year 7 to 15 £1.2 m
Maximum Profit £4.5 m

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Energy Efficiency Summary – 'Peterborough' District Council

Scope
3 Swimming Pools, Sports Centre, Multi Storey Car Park, Market and Town Hall

Costs
Capital Investment £2.6 m
Operational & Funding Costs £1.8 m
Total Cost £4.4 m
Less
Savings at 80% £4.4 m
Cost Savings & Cost Avoidance £2.1 m
CO2 Saving 1423 Tonnes
Net Profit £2.1 m

Add
Energy Upside Year 1 to 6 £0.4 m
Year 7 to 15 £1.2 m
CO2 Savings upside, 80-100% 356 Tonnes, (80-100%)
Maximum Profit £3.7 m

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Energy Efficiency Summary – 'Peterborough' County Council

Scope
33 Schools, Library and Town Hall

Costs
Capital Investment £2.2 m
Operational & Funding Costs £1.2 m
Total Cost £3.4 m

Less
Savings at 80% £4 m
Cost Savings & Cost Avoidance £0 CO2 Saving 793 Tonnes
Net Profit £0.6 m

Add
Energy Upside Year 1 to 6 £ 0.4 m(80-100%)
Year 7 to 15 £1.1 m
CO2 Savings upside, 80-100% 198 Tonnes , CRC Saving upside saving £4K
Maximum Profit £2.1 m

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Solar PV

‘Lets make money while the sun shines …..

MEARS

Completed - Peterborough

1.40MW of roof mount solar including:

- Town Hall
- Regional Pool
- Sports Centres
- Football Club
- Commercial Roof
- 13 Schools

Completed – Colchester Borough Council

0.5 MW of roof mounted solar including:

- Leisure Centre
- Offices
- Sports Pavilion
- Crematorium

Solar PV projects

Work in progress:

Peterborough
- Phase 3 of PCC Schools (43 Schools in total) 1.92MW
- 4 industrial estates 3.24 MW

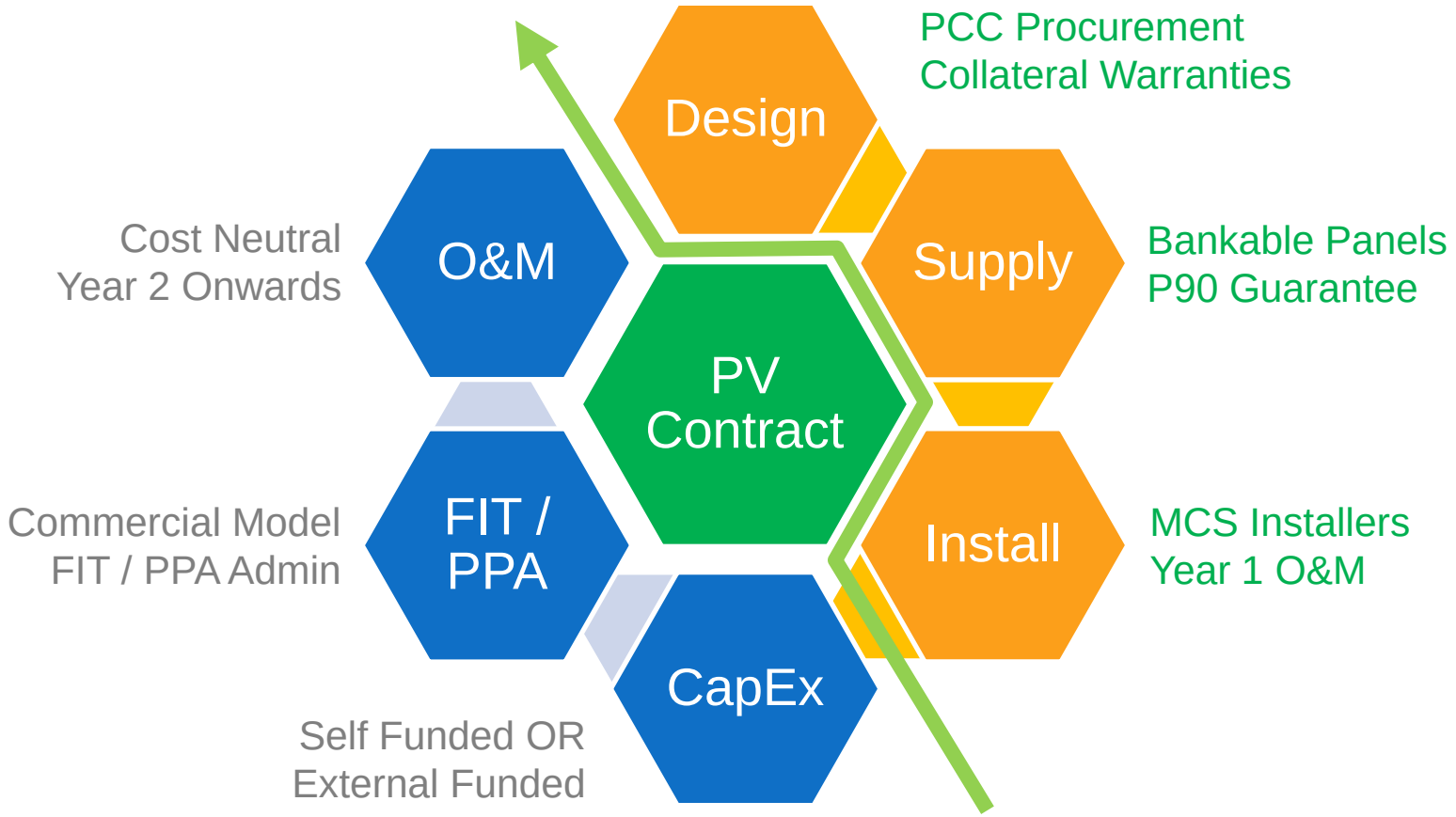
Colchester Borough Council
- 4 installations to Colchester CC at 0.25MW
- Solar Canopies to Car Parks at 600KW

Under Development

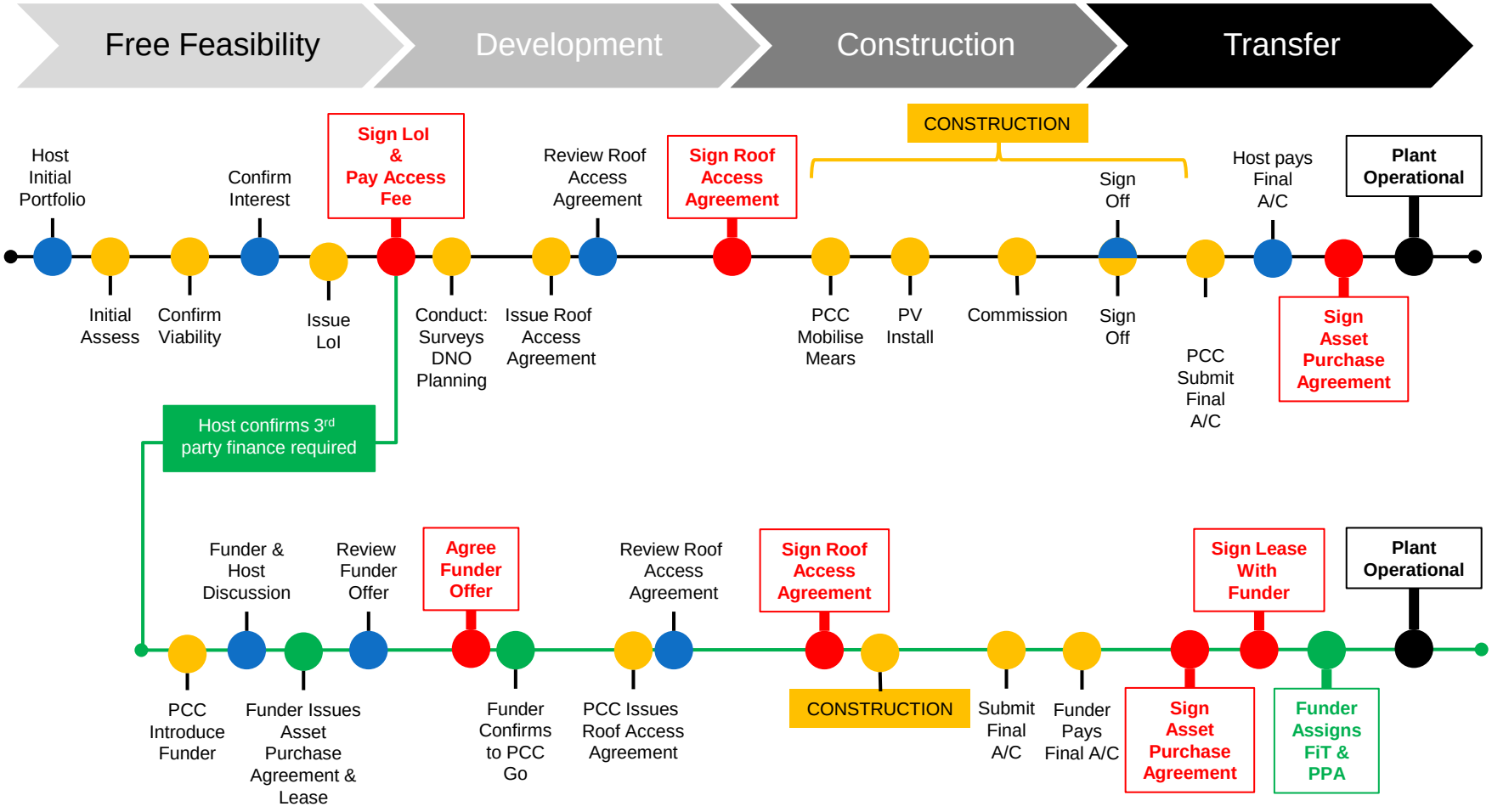
- Commercial Roofs in Peterborough
- Rugby Borough Council – Corporate Property Portfolio
- Axiom Housing Association – Entire property portfolio
- West Oxfordshire District Council – Corporate portfolio

- Roll out to other authorities - proposals currently with 14 authorities for approval

Mears Contract: Outline scope



Mears solar contract: Overview



100 houses is:

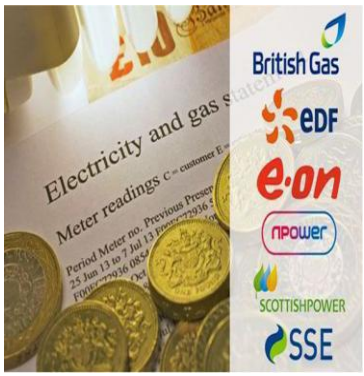
- 40kw,
- over £100k profit ….
- and £24k per annum free energy to occupiers

50 kw install is:

- £3.6k per annum green energy
- Profit of £100k to £160k

Mears -Annual Profit on current 46 solar PV roof installations of 4.4MW is approximately £400K

- Risk v Returns



Renewables : 5MW Solar Farm - Sensitivities

Figures valid until 31 March 2015

PV Assessment		
ITEM	FLEX	VALUE
Base Case	**N/A**	**£7.82m**
Installation Costs	£100/kW increase	£6.92m
Installation Costs	£100/kW decrease	£8.73m
Grid Connection Costs	Double to £50/kw	£7.60m

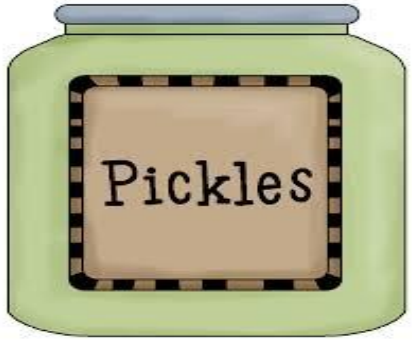
PV Assessment		
ITEM	FLEX	VALUE
FIT Income	10% decrease	£7.05m
PPA Income	10% increase	£8.99m
PPA Income	10% decrease	£6.64m

'Value' represented is the net nominal position.

KEY……KEY RISKS!

UK Power Networks

Delivering your energy



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AVIC Partnership

- On 17 June 2014 the Governments of the UK and the People's Republic of China issued the UK-China Joint Statement on Climate Change.
- Specific areas of collaboration, state that new opportunities for collaboration between the People's Republic of China and the UK exist in renewable (and specifically solar) energy, and low carbon urbanisation.
- The strategic partnership between PCC and AVIC is aligned to the wider collaboration between the UK and the People's Republic of China that these statements envisage.

AVIC INTERNATIONAL CORPORATION (UK) LTD

- AVIC is a subsidiary of the Chinese State-owned company, AVIC International Corporation Holding Limited. The 2013 global turnover of was £14.8 billion (¥146.5 billion (RMB))

- The main business of AVIC is development, investment and construction in the renewable energy and energy efficiency industries in the UK.

- AVIC anticipates that 5% of its global turnover will come from the UK over the next 5 years.

- AVIC also represents the interests of a number of the state-owned companies of China in the UK. These include, but are not limited to the following:

  - Shanghai Electric, Huawei, China Telecom and Bank of China

AVIC Partnership – Benefits to Peterborough

- job creation;
- education and training in the latest renewable energy technology;
- supporting the development of an enhanced university/higher education offer in Peterborough through AVIC introducing its partners and other Chinese state owned companies and investors;
- a “one-stop” solution around regeneration and development towards a Smart City also once AVIC has an established market in the UK this will include providing a final fabrication facility for smart meters, solar panels and street lighting;
- access to a diversified business network at state and government level with China.

AVIC Partnership – Benefits to China

- a pipeline of projects for which AVIC can supply to, provide investment in or act as developer;
- access to the wider public sector and local authority market in the UK;
- access to the acquisition of various developments across the UK;
- access to various major regeneration projects across Peterborough;
- a case study, in that Peterborough could be a reference point that AVIC could use to launch a major national campaign for renewable energy, energy efficiency and Smart City technology;
- a platform for income generation.

AVIC Partnership - First projects:

- the installation of solar PV canopies in certain car parks in Peterborough;
- the installation of light emitting diode (LED) street lighting technology in Peterborough;
- the installation of municipal Wi-Fi in Peterborough;
- the development of an integrated, technology enabled transport platform in Peterborough linking services such as CCTV, intelligent transport information and real time passenger information, for example;
- the development of ground and roof-mounted solar and other renewable generation opportunities; and
- the development of an infrastructure platform to enable future regeneration and growth in Peterborough.
- Smart City

Energy from Waste

Viridor Transforming waste™ B&W vølund Interserve

- Energy From Waste Plant – 85,000 tonnes
- Most efficient of its size in UK
- New Business Model
- Council takes the energy – 7.2 MW
- CHP enabled for heat option

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Delivering projects – KEY INGREDIENTS FOR SUCCESS

- Political leadership
- Small skilled team
- Agile governance support
- External Advisors
- Invest to save budget
- Priorities delivered through enabling
- Learning from others
- Being commercially minded
- Taking action

Energy resourcing requirements

1 Compliant

+

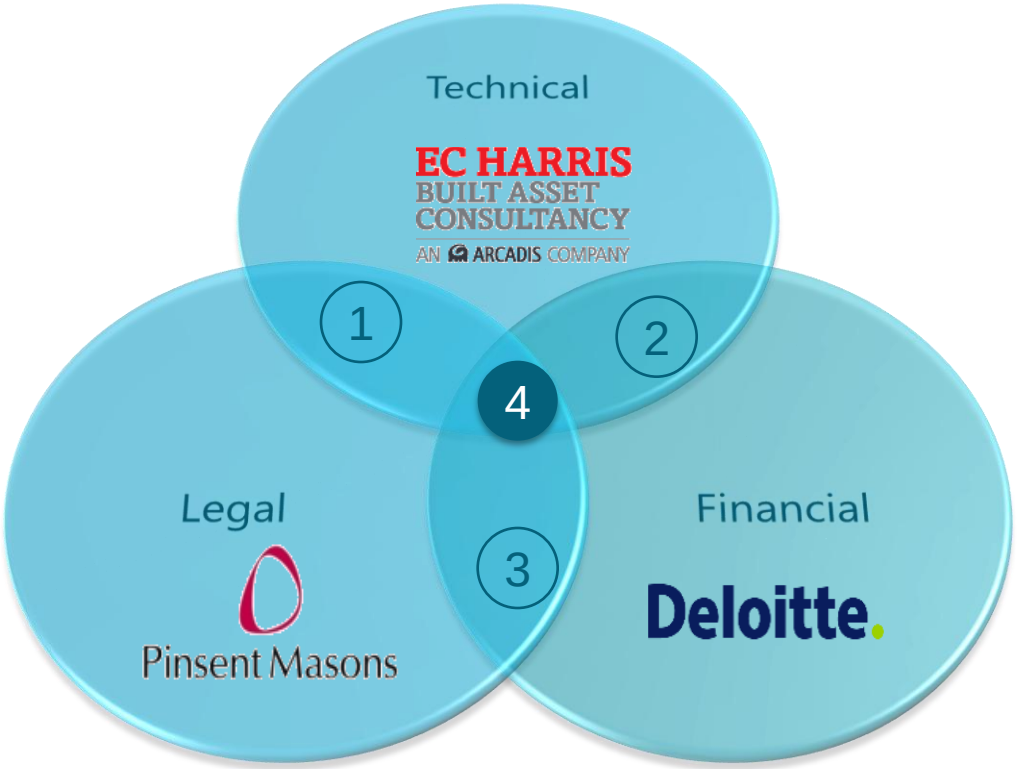
2 Bankable

+

3 Structured

=

4 Commercialised



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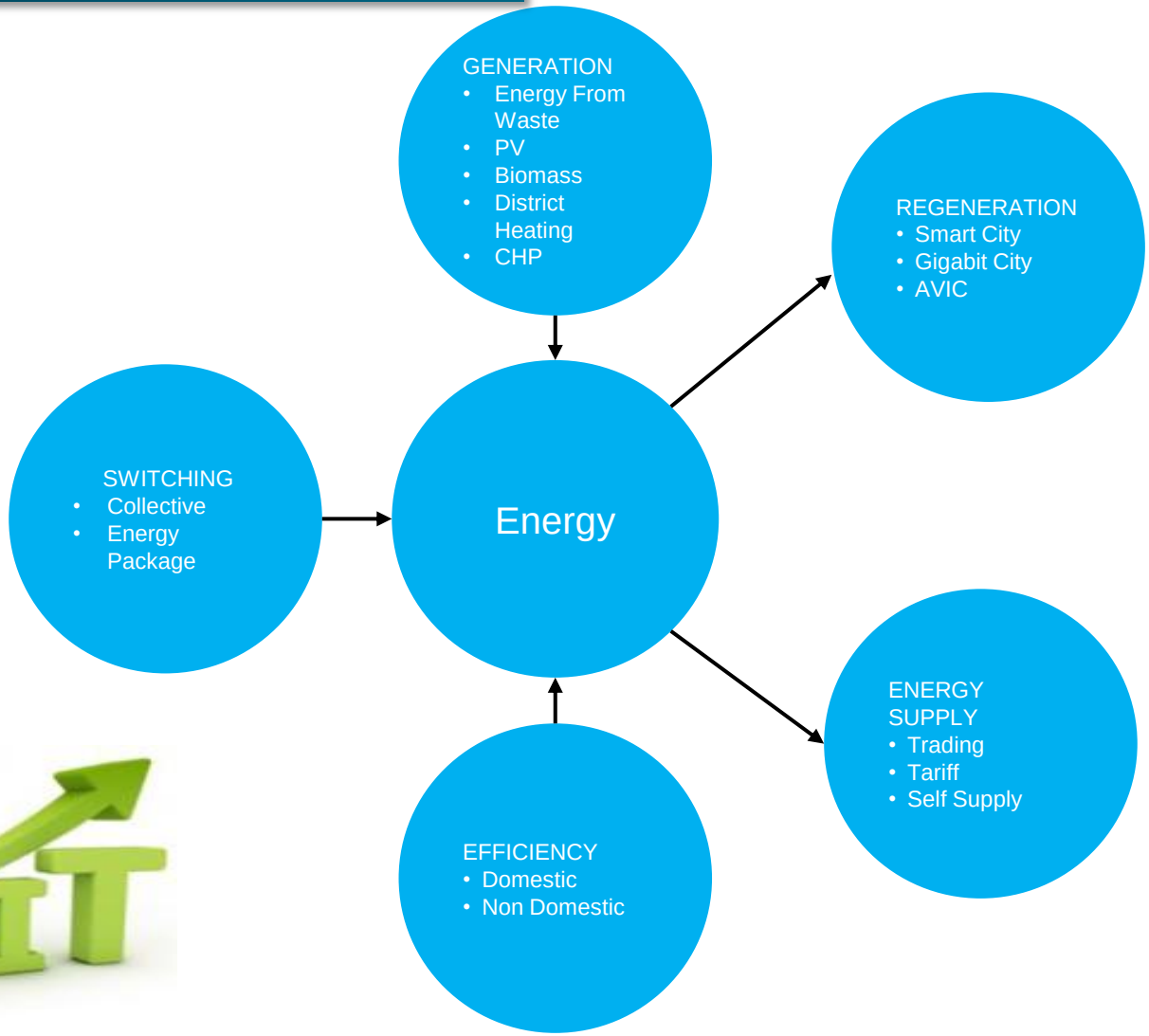
Energy : The drivers for the Council



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Work in progress – new products

KEEP
CALM
AND
GATHER
YOUR MINIONS

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CityFibre
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Blue Sky Green Energy

Partners


AgilityEco


amey


apse


AVIC
AVIC INTL


British Gas
Looking after your world


B&W
vølund


CityFibre


Deloitte.


EC HARRIS
BUILT ASSET
CONSULTANCY
AN ARCADIS COMPANY


ECO
LANGLEY


EMPOWER
PETERBOROUGH


e·on


Honeywell


ichoosr


Investing for a brighter future.
Lucent


mark group
The Energy Saving Experts


MEARS
PROJECTS
Making People Smile


Opportunity Peterborough


energy


Pinsent Masons


serco
Bringing service to life


SKANSKA


Viridor
Transforming waste™


Vivacity
Peterborough
Culture and Leisure

Next steps

John Harrison

Executive Director Resources
Peterborough City Council
Managing Director, Blue Sky Peterborough
john.harrison@peterborough.gov.uk
+44 (0) 1733 452 520

Steven Morris MRICS

Head Of Energy Saving & Production
Peterborough City Council
steven.morris@Peterborough.gov.uk
+44 (0) 1733 384657
07920 160194

Andy Cox

Head of Energy Programmes
Peterborough City Council
andy.cox@peterborough.gov.uk
+44 (0) 1733 452 465
07920 160121