

Installing Solar Canopies – Where, How and Why?



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Energy Projects Manager



Nottingham
City Council

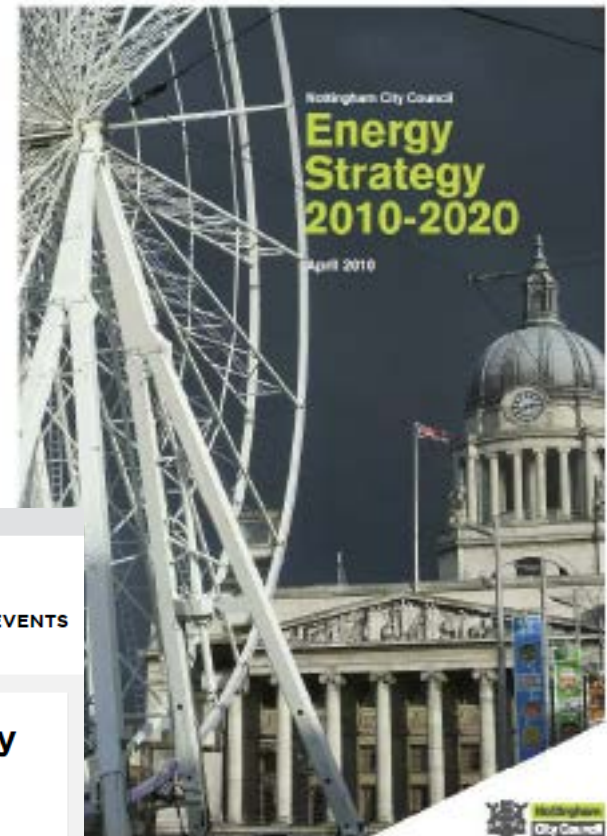
Nottingham Energy Strategy

Target:

26% reduction by 2020 against 2005 levels

Achieved:

33% reduction in 2016



edie.NET

HOME NEWS FEATURES TOPICS JARGON BUSTER SUPPLIERS EVENTS *NEW!*

Nottingham smashes climate targets four years early

8 August 2016, source [edie newsroom](#)

Nottingham has surpassed its climate change targets four years early, according to Government data which shows a 33% reduction in the city's carbon emissions since 2005.

Energy Projects Service



Energy Projects Service

- Energy Performance Certificates (domestic and non-domestic)
- Display Energy Certificates
- Air Conditioning Surveys
- EE Monitor (for heat metering and billing)
- Renewable Energy project management
- Energy Efficiency project management
- Environment Management System consultancy
- Energy Saving Opportunity Scheme consultancy

<http://nottmcommercialservices.co.uk/energy-projects-service/>



The Nottingham Experience

- 4,200 Domestic Installations – Total of 12MWp
- 52 Commercial Sites – Total 1.8MWp
- 2 Large scale solar canopies – Largest publicly owned in the UK and award winning for innovation
- In total over 14MWp of Solar PV in the last 3 years
- Generating an annual income of £1.3M

NCC Solar Canopy Programme

1. Site selection

2. Business Case
3. Internal Approval
4. External Approval
5. Delivery
6. Monitoring and Maintenance

- Orientation
- Shading
- Car park layout
- On site energy user
- Site longevity



NCC Solar Canopy Programme

1. Site selection

2. Business Case

3. Internal Approval

4. External Approval

5. Delivery

6. Monitoring and Maintenance

- Energy savings
- FiT income
- 5% ROI (after borrowing)
- Additional considerations
 - o EV charging
 - o Shared installation costs
 - o Premium Parking
 - o Advertising
 - o LED lighting
 - o Surface protection



NCC Solar Canopy Programme

1. Site selection

2. Business Case

3. Internal Approval

4. External Approval

5. Delivery

6. Monitoring and Maintenance

- Pre approved limits
- Exec Board



NCC Solar Canopy Programme

1. Site selection
2. Business Case
3. Internal Approval

4. External Approval

5. Delivery
6. Monitoring and Maintenance

- DNO grid connection
- Planning
 - Specification
 - Structural details
 - Drainage and surface-water management
 - Grid connection
 - Glint and glare
 - Details of construction
- Consultation



NCC Solar Canopy Programme

1. Site selection
2. Business Case
3. Internal Approval
4. External Approval

5. Delivery

6. Monitoring and Maintenance

- Internal delivery
- Specialist Contractors
- Scheduled maintenance (in business plan)
- Visual displays



Harvey Hadden Sports Village

Total kWp: 67

Area (m²): 400

Estimated generation (kWh): 51,000

Carbon savings (Tonnes): 29





HARVEY HADDEN SPORTS VILLAGE

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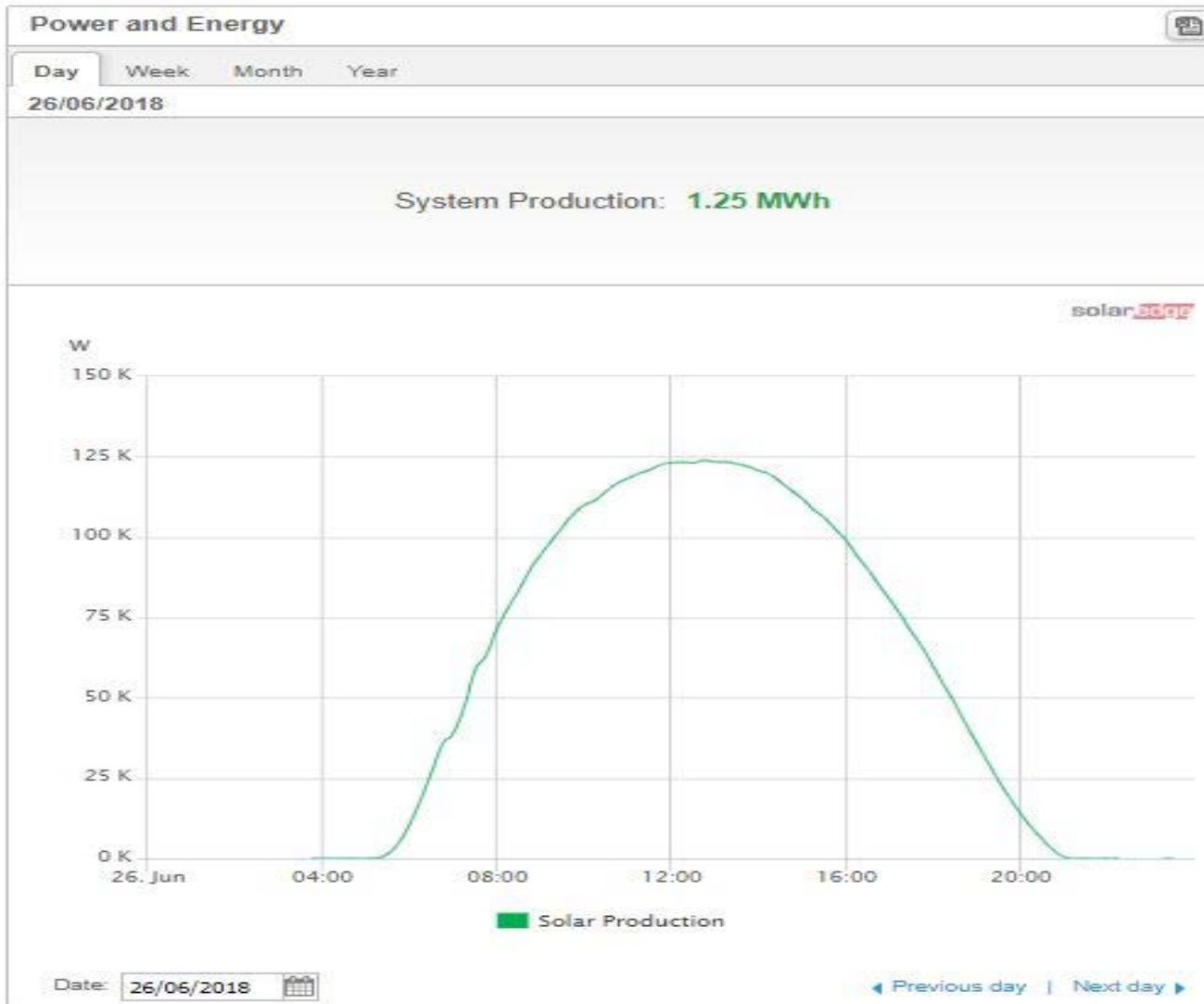
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Harvey Hadden Sports Village

Total kWp: 267 kWp

Overview			
Current Power	Energy today	Energy this month	Lifetime energy
67.16 kW	104.27 kWh	23.68 MWh	80.04 MWh



Ken Martin Leisure Centre

Total kWp: 89

Number of panels: 354

Parking Bays: 41

Estimated generation (kWh): 80,000

Carbon savings (Tonnes): 36





Further Developments

- Further commercial PV and Solar Carport rollout
- PV Framework

Lot number	Category	Estimated Value Range of Call-offs	Approx. value over four years	
			Nottingham City Council	Partner Organisations
1	Supply of Domestic Solar PV Panel Kits and Accessories	£0 - £500k	£3 million	£3 million
2	Supply of Commercial Solar PV Materials and Accessories	£0 - £500k	£10 million	£3 million
3	Supply & Installation of Domestic Solar PV	£0 - £3m	£3 million	£9 million
4	Supply & Installation of Commercial Solar PV	£0 - £5m	£7 million	£10 million
5	Installation of Solar PV	£0 - £100k	£4 million	£2 million
6	Design of Specialist Solar PV	£0 - £100k	£0.5 million	£0.5 million
Total			£27.5 million	£27.5 million



Canopy Impressions



Further Developments

- Battery Trial
- EV charge point rollout through Go Ultra Low
<http://goultralownottingham.org.uk/the-programme/public-charging-infrastructure-network/>
- Vehicle to Grid trial through Interreg funding:
<http://www.nweurope.eu/projects/project-search/cleanmobilenergy-clean-mobility-and-energy-for-cities/>
- PPA





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