



Opportunities for energy saving in public lighting: achieving the 33% energy reduction target

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NRA Conference 2014

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NRA
An tÚdarás um Bóithre Náisiúnta
National Roads Authority

- What is NRA doing to promote efficient and effective public lighting?
- Public lighting energy efficiency techniques
- NRA public lighting energy efficiency pilot schemes to date
- Barriers to implementing energy efficiency in public lighting
- NRA plans



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What is NRA doing to promote efficient and effective public lighting?

- Public Lighting Energy Efficiency Pilot Schemes
- Funding of various Local Authority Public Lighting Energy Efficiency Schemes
- Development of Guidance Notes, Technical Specifications
- Strategic Guidance



Public Lighting Energy Efficiency Techniques

- Knowing your asset – have an accurate up-to-date inventory
- Assessing the necessity of proposed public lighting
- Considering removal of unnecessary public lighting
- Reviewing lighting classes applied in consideration of European Standards
- Trimming the operational hours of public lighting
- Dimming
- Upgrading to modern luminaires, lamps and control gear
- LED lighting



NRA Public Lighting –Pilot Projects to Date

1. N51 Navan, with Meath Co Co:

Dimming, trimming, CMS, 18% energy savings

2. N11 Glen of the Downs, with Wicklow Co Co:

Dimming, trimming, CMS, power controller; 26% energy savings

3. N25 Ashfield Roundabout, with Wexford Co Co:

Dimming, trimming, CMS, 28% energy saving



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NRA Public Lighting –Pilot Projects to Date (cont'd)

4. N40 Mahon Interchange, with Cork City:
LEDs, dimming, trimming, 45-50% energy savings
5. N5 Castlebar, with Mayo Co Co:
LEDs, dimming, trimming; 42% energy savings



In 2014, NRA is partially funding public lighting energy efficiency projects on N78 in Laois, various national secondary roads in Longford (both part funded by SEAI), and fully funding a public lighting energy efficiency project on N52 in Offaly.



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Micro-generation Wind Turbine Pilots

With South Tipperary Co Co & Tipperary Energy Agency

- M8, Junction 9, Cashel – Vertical Axis Wind Turbine
- M8, Junction 10, Cahir – Horizontal Axis Wind Turbine



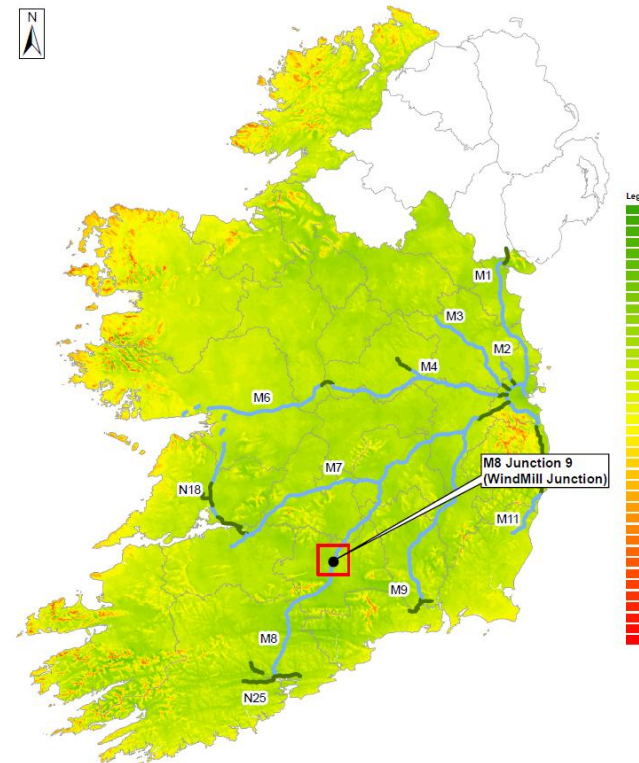
VAWT

M8 Junction 9



HAWT

M8 Junction 10



GIS Wind Map

Barriers to Implementing Energy Efficiency in Public Lighting

- Poor Asset Inventory:

There is now an agreed set of data fields required to enable investigation of energy saving opportunities

- Current energy tariff structure

- Investment capacity

- Unknown Energy Saving Opportunities (ESOs)



NRA Plans;

A national committee has recently been established to co-ordinate future developments in this area

Work Packages to be carried out by Arup for NRA:

Lessons learned from working on the pilot projects will feed into this work.

1. Lighting (Energy Efficiency)

Once have compiled the necessary asset inventory, develop detailed proposal and business case to address NEEAP for public lighting on MMaRC motorways and dual carriageways, identifying energy saving opportunities.

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NRA Plans: Work Packages to be carried out by Arup for NRA

2. Lighting (Energy Liaison)

Provide technical advice on tariff structure agreements/ use of equivalence metering.

3. Lighting (Energy Strategy and Guidance)

Publish Intelligent Street Lighting Technology Assessment Report

Prepare step by step guidance document for local authorities

Prepare business case for the public lighting energy efficiency proposals, for the local authority maintained national roads

Prepare template specifications



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NRA Plans: Work Packages to be carried out by Arup for NRA

4. Lighting (Standards)

Update series 1300 and 1400 of the NRA DMRB to include guidance on energy saving lighting technologies.



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THANK YOU

