



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
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Accessing the TAMS II On- Farm Renewables Fund

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Presentation Overview

- Energy: Background / Context
- Solar PV & LED
- Tams Energy Related Eligible Items



Background / Context



Renewable Energy & Energy Efficiency Targets for 2020 & 2030

Renewable Energy Targets

- 20% of by 2020
 - currently 16%
- 32% by 2030

Energy Efficiency Targets

- 20% by 2020
- 32.5% by 2030

Background / Context - Key Points



- Energy Costs – significant part of overheads / operating costs - approx. 15%
- **Dairy sector** significant levels of electricity use
 - Heating, cooling & milking accounting for 75% of electricity demand
 - Equating to €40 - €45 million in electricity costs
- **Pigs & Poultry** significant heat users
 - 80% - 85% of energy demand is in the form of heat (using either kerosene or electricity)
 - Equating to €23 million in heat, power & electricity costs
- Energy use accounts for ca. **5% of total Agricultural emissions**

TAMS On-Farm Investment Scheme

- €10 million of grant aid available for energy efficiencies and renewable energy technologies
- Announcement by Minister for Agriculture in March
 - “part of the wider drive to position Irish agriculture as a global leader in sustainability”
- Eligible investments include:
 - Solar PV Installation on Farms – to extend current availability under Tams II to all sectors
 - LED Lighting

Solar Photovoltaic (PV) System



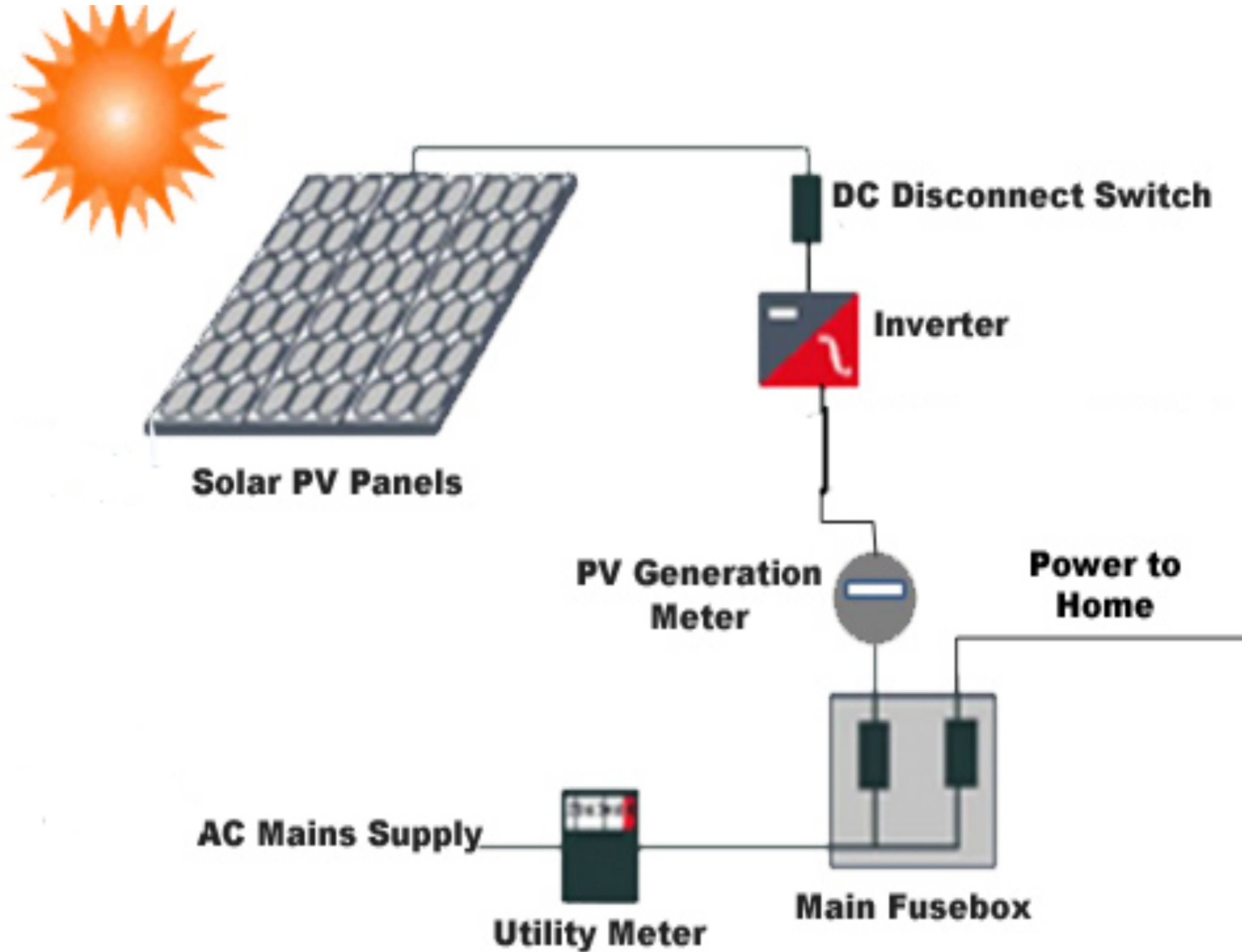
- A Solar PV system consists of a number of solar panels/modules mounted on a roof and connected into the electrical circuit of the building
- Solar panels when exposed to light generate direct current (DC) electricity, which is then converted in an inverter to alternating current (AC) electricity that powers homes and businesses
- Solar PV systems are rated in kilowatts (kW)
- A 6kW solar PV system would require about 20 solar panels on roof equivalent to 33 square meters
- Planning permission for solar panel array in excess of 50 square meters

Solar PV Components



- Solar PV Modules ~ 300W output
- Mounting System
- Inverter - DC to AC
- Electrical Cable
- Isolation (switch) of Solar Panel Array

Solar PV On-Farm Installation



Tams Grant Application



Solar PV grant applications are made under the following Tams measures:

Animal Welfare	Young Farmers
Organics	Pigs & Poultry

Requirements at Application Stage



Documents to be uploaded on the online application:

- A copy of the energy survey, signed by the Installer
- A farmyard plan indicating the location of PV Panels, inverter, batteries, etc.
- Detail drawing of the location of solar installation, orientation, location of other buildings, obstructions (trees, hedges etc.), mounting type (roof, wall or ground)

Solar PV On–Farm Installation



- Grant aid for up to 6kWp Solar PV System
- Installation **is not** limited to 6kWp
- Battery is optional – stored in cabinets in plant room - IP65 Rated
- Dairy farms, pig & poultry farms - battery may not be needed – energy survey
- All other farm enterprises - battery will likely be recommended - energy survey
- NC6 form – ESB Networks



Solar PV On–Farm Installation

- Solar PV (without Battery) $y = 1044x + 1340$ - Turn key solution
- Battery: €505 per kWh
2.4kWh unit modules

		40% Grant	60% Grant
Solar PV 6kWp	€7,604	€3,042	€4,562
Battery 2.4kWh	€1,212	€485	€727
Total Cost	€8,816	€3,526	€5,290

Potential Opportunities for Solar PV Renewable Energy

❑ **Total Costs of Electricity Use on Dairy Farms**

€40 million to €45 million

- ❑ Heating, cooling & milking accounts for 75% of all electricity demand

Average Dairy Farm energy usage

16,000 – 18,500 kWh

Projected growth = 22,000 kWh (25% increase)

RE target of 32% = saving of **5,120kWh** per farm required

6kW Single Phase Solar PV Array

Cost €7,600 (excl VAT)

Average Electricity Cost €2,881

Average Annual Saving €710

no grant 10.5 years

40% grant 6.4 years

60% grant 4.3 years

25% contribution from Renewable Electricity

LED Lighting



- LED Lighting is more efficient than conventional lighting, consuming considerably less energy
- All lighting funded under TAMS II scheme is now required to be LED lighting for all new farm buildings
- Only LED lighting will be grant aided in future

Existing TAMS Energy & Efficiency measures



Dairy

- Heat Transfer unit, taking heat from compressor to heat water

Farm Safety

- Yard Lights (min 200W equivalent, either metal halide or LED)

Existing TAMS energy & efficiency measures



Pigs & Poultry

- Solar PV & Solar Thermal
- Heat Recovery Units
- Air Source Heat Pumps
- Biomass boiler

Efficiency Upgrade for Pig Housing



- Frequency controller for feed pumps & feed mixer motors
- Energy efficient lighting
- Ventilation System
- Electrical Heat Pads
- Water heat Pads
- Insulated Creep boxes – Covered
- Creep covers

Efficiency Upgrade for Poultry House



- Roof / Wall / Door Insulation (for pig housing also)
- Ventilation fans and control system for free range layer house
- Ventilation fans and control system for broiler house
- Replacement concrete floor for temperature control
- Indirect heating system



For Queries contact:

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Thank You!