

## Upgrading lines



Kildare-Meath Grid Upgrade



## Upgrading lives



Have your say at [eirgrid.ie/KildareMeath](https://eirgrid.ie/KildareMeath)





## Who are EirGrid?

- Develops & operates the electricity grid
- Independent from ESB since 2006
- State-owned company that works for the benefit of all electricity users
- Plans and responds to electricity needs: now, tomorrow and in twenty years.





# What does EirGrid do?

- We send electricity from where it is generated to where it is needed
- We operate wholesale markets so there is enough power at the best price
- The grid carries large amounts of power – so we only directly supply high-volume users
- The grid also powers ESB distribution network that supplies homes, farms and small businesses



# The Kildare-Meath Grid Upgrade

- Connect Woodland in County Meath and Dunstown in County Kildare
- Integrate electricity generators (renewable and conventional)
- Serve growing demand in the East
- Introduce large cross-country power flows to the East
- Better distribute power within Kildare, Meath and surrounding counties



Essential to meet Climate Action Plan target of 70% renewable energy generation by 2030

# Our Framework for Grid Development

## Step 1

How do we identify the future needs of the electricity grid?

## Step 2

What technologies can meet these needs?

## Step 3

What's the best option and what area may be affected?

## Step 4

Where exactly should we build?

## Step 5

The planning process

## Step 6

Construction, energisation and benefit sharing.

# Benefits



## **Competition**

Apply downward pressure on the cost of electricity to consumers



## **Sustainability**

Help facilitate Ireland's transition to a low carbon energy future



## **Security of Supply**

Improve electricity supply for Ireland's electricity consumers



## **Community**

Deliver community benefit in the areas that facilitate the project infrastructure



# Grid infrastructure & Foreign Direct Investment

“Proper infrastructure is key to Ireland maintaining its international competitiveness. **We must maintain an environment that is conducive to doing business** – and adequate commercial energy capacity is central to that.

IDA Ireland views EirGrid’s new strategy to upgrade the national electricity grid as a positive move, and welcomes EirGrid’s stated aim of transitioning the electricity sector to low-carbon, renewable energy.”

Martin Shanahan, CEO of IDA Ireland



A man and two women are gathered around a table, looking at a map. The man is pointing at the map, and the women are looking on. There are papers and a laptop on the table. The background is a large window with a view of a green landscape.

# Options

- **Option 1:** Connect two existing 220 kV overhead lines and increase voltage to 400 kV
- **Option 2:** Build a 400 kV overhead line
- **Option 3:** Build a 220 kV underground cable
- **Option 4:** Build a new single conductor 400 kV underground cable in one route
- **Option 5:** Build a new 400 kV underground cable using two new conductors in two separate routes



# Assessment Criteria



1. **Technical** aspects
2. **Economic** factors
3. **Environmental** factors
4. **Socio-economic** factors - such as the local economy and local amenities
5. **Deliverability** factors – such as timeline and potential risks.

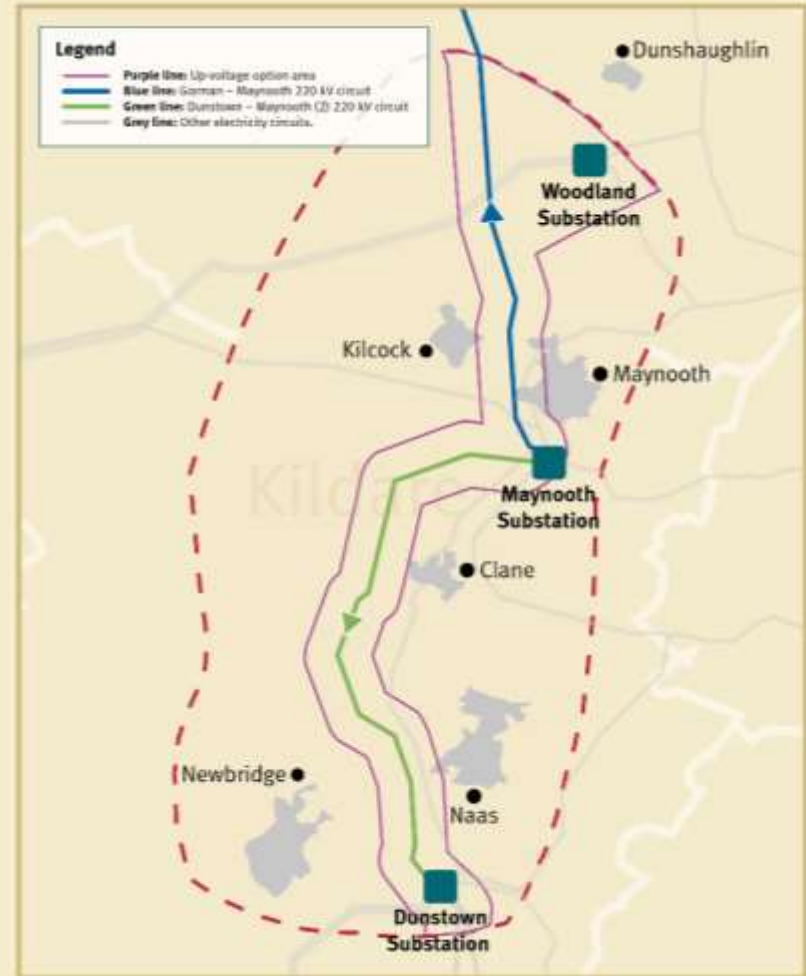
# Emerging Best Performing Option

- Option 1 is the emerging best performing option (overhead line).
- Option 4 is the emerging best performing alternative (underground cable).

## Option 1: Emerging Best Performing Option

**Connect two existing 220 kV overhead lines and increase voltage to 400 kV.**

- Gorman – Maynooth 220 kV circuit (blue line); and
- Dunstown – Maynooth (2) 220 kV circuit (green line)





## Option 1: Emerging Best Performing Option

**Connect two existing 220 kV overhead lines and increase voltage to 400 kV.**

- Gorman – Maynooth 220 kV circuit (blue line); and
- Dunstown – Maynooth (2) 220 kV circuit (green line)

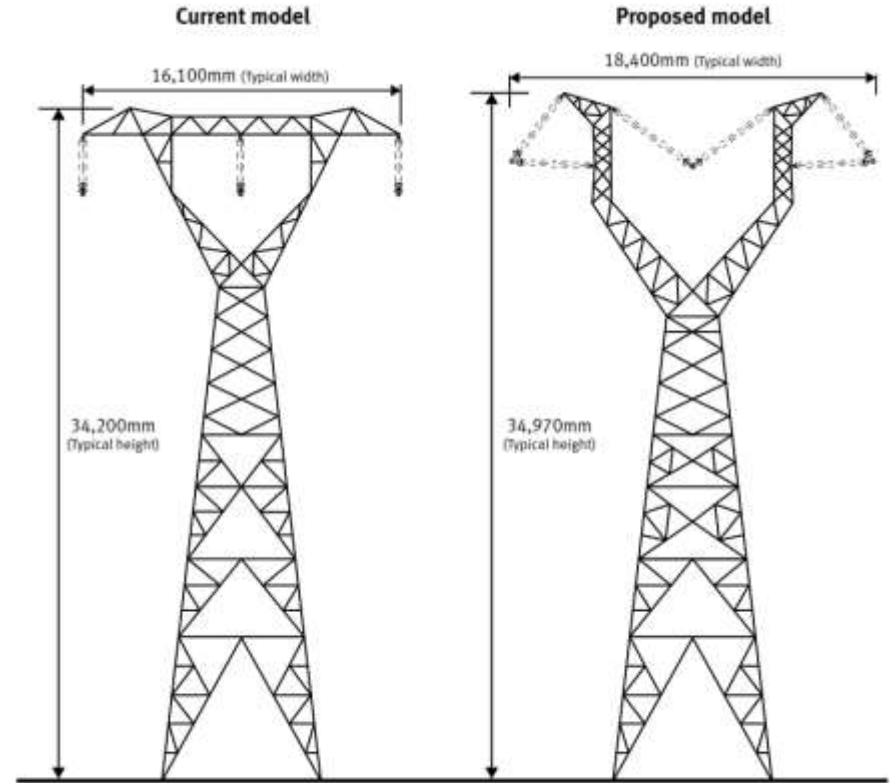
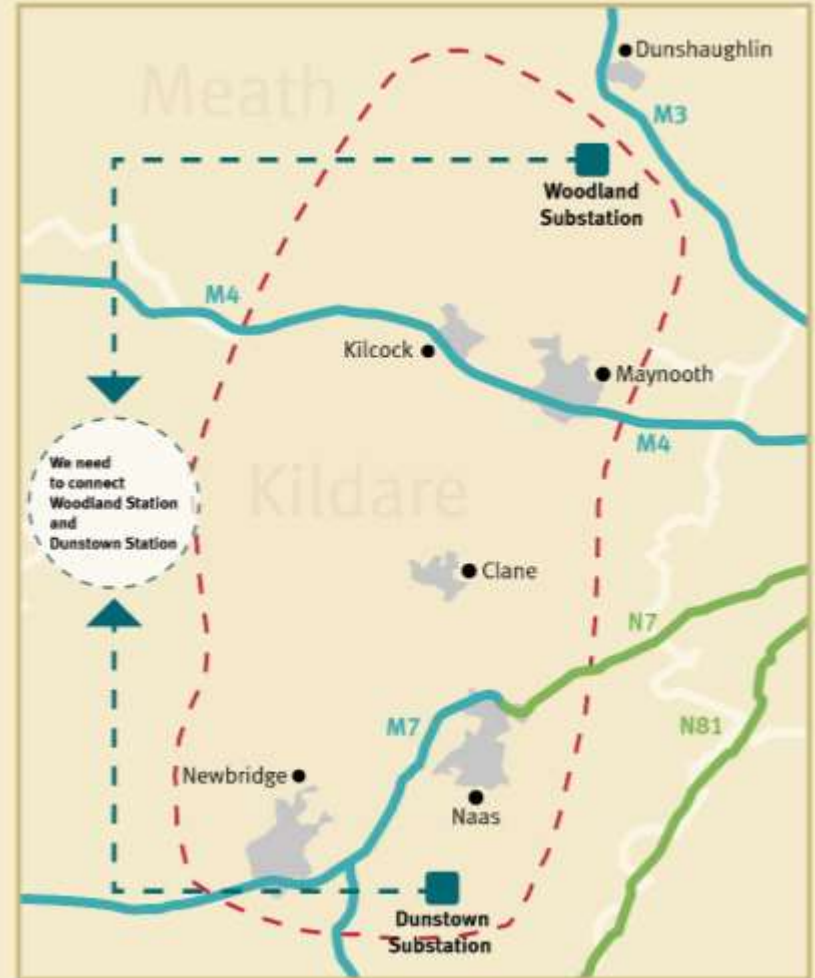


Figure 6: The tower on the left is the current model used on the existing route. These would be replaced by the model on the right.

## Option 4: Emerging Best Performing Alternative

### A new single conductor 400 kV underground cable in one route

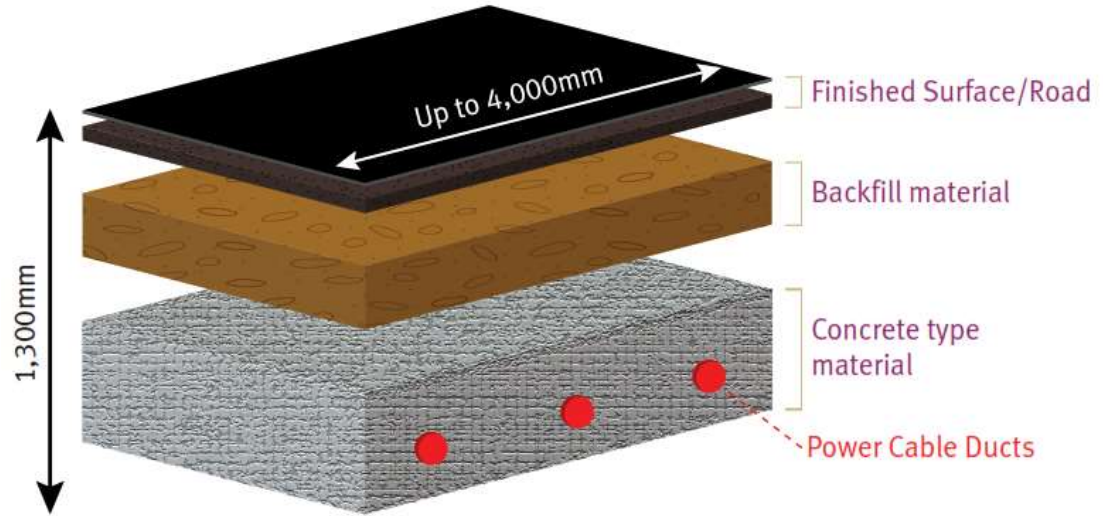
- Preferably installed under the existing road network.
- 4-metre-wide trench required.
- Local traffic restrictions required.
- Additional work on the Dunstown and Woodland stations would be required.



## Option 4: Emerging Best Performing Alternative

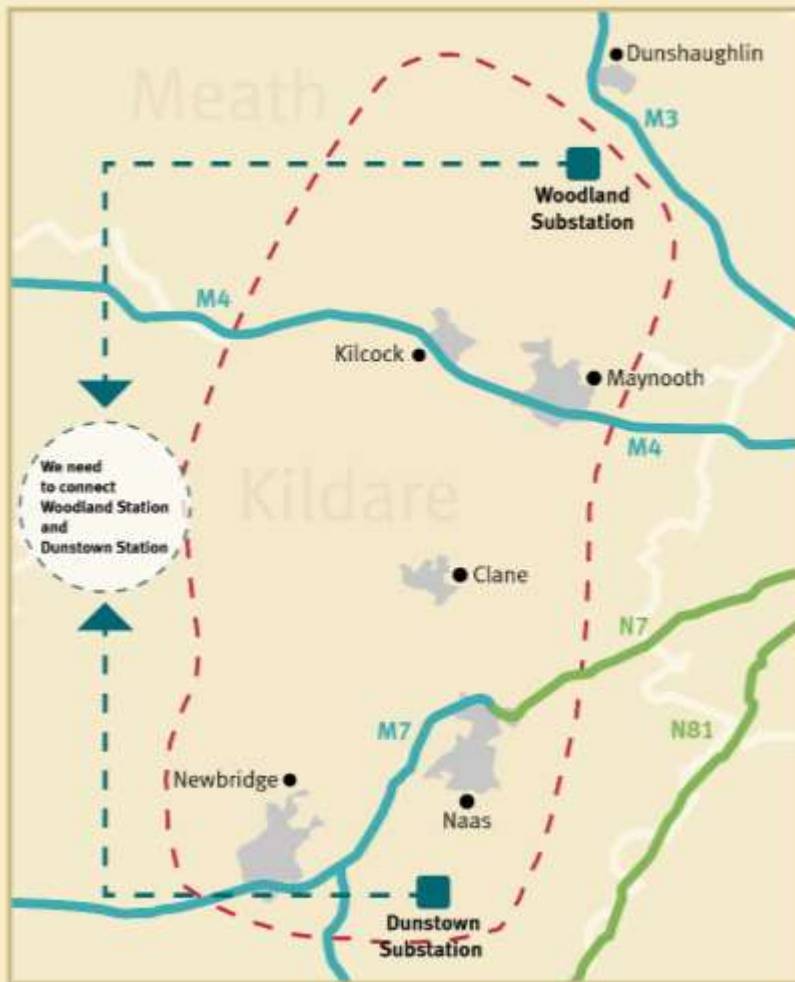
### A new single conductor 400 kV underground cable in one route

- Preferably installed under the existing road network.
- 4-metre-wide trench required.
- Local traffic restrictions required.
- Additional work on the Dunstoun and Woodland stations would be required.



**Indicative underground cable arrangement**





### **Option 2:**

**A new 400 kV overhead line.**

### **Option 3:**

**A new 220 kV underground cable**

### **Option 5:**

**A new 400 kV underground cable using two new conductors in two separate routes**

**A brief comparison of the 5 options being considered for this project. Find out more at [www.eirgrid.ie/KildareMeath](http://www.eirgrid.ie/KildareMeath)**

| <b>Consideration</b>                          | <b>Option 1</b><br>Connect two existing 220 kV overhead lines and up-voltage to 400 kV  | <b>Option 2</b><br>Build a 400 kV overhead line            | <b>Option 3</b><br>Build a 220 kV underground cable   | <b>Option 4</b><br>Build a single conductor 400 kV underground cable in one route           | <b>Option 5</b><br>Build a 400 kV underground cable using two conductors in two separate routes |
|---|---|--|---|---|---|
| Outcome of multi-criteria assessments to date | Emerging best performing option   | Not emerging as a preferred option                         | Not emerging as a preferred option  | Emerging best performing alternative  | Not emerging as a preferred option  |
| Capital cost                                  | €239m   | €168m  | €372m   | €356m   | €679m   |
| Environmental impact                          | Least risk  | Moderate risk  | Moderate risk   | Moderate risk   | Most risk   |
| Potential disruption during construction      | Possible road closures, traffic and land access disruption  | Possible road closures, traffic and land access disruption | Possible road closures, traffic and land access disruption                                  | Possible road closures, traffic and land access disruption                                  | Possible road closures, traffic and land access disruption                                      |
| Visual difference when construction completed | There will be changes to existing overhead infrastructure with minimal new infrastructure on the existing route. New infrastructure into Woodland station | New overhead infrastructure                                | New underground infrastructure, mainly under existing roads. No new overhead infrastructure | New underground infrastructure, mainly under existing roads. No new overhead infrastructure | New underground infrastructure, mainly under existing roads. No new overhead infrastructure     |
| Meets technical requirements                  | Yes   | Yes  | Not to the same level as other options  | Yes   | Yes   |
| Other notable points                          | Uses route along existing overhead lines and maximises use of existing infrastructure   |  |   | Requires a 4 metre wide cable trench and overall work space of up to 12 metres in places    | Requires the same as option 4 but along 2 routes  |

# How can I get involved?

## Where can I find out more?



Documents Online



Interactive Maps



Virtual Exhibition



Upcoming Webinars



Speak to the Team

## How do I share my views?



Freepost Questionnaire



Online Questionnaire



Post your submission



Email your submission

**Web:** [www.eirgrid.ie/KildareMeath](http://www.eirgrid.ie/KildareMeath)



# Thank You!



**Email the team:**

[KildareMeath@eirgrid.com](mailto:KildareMeath@eirgrid.com)

**Phone Gráinne:**

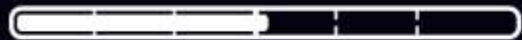
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