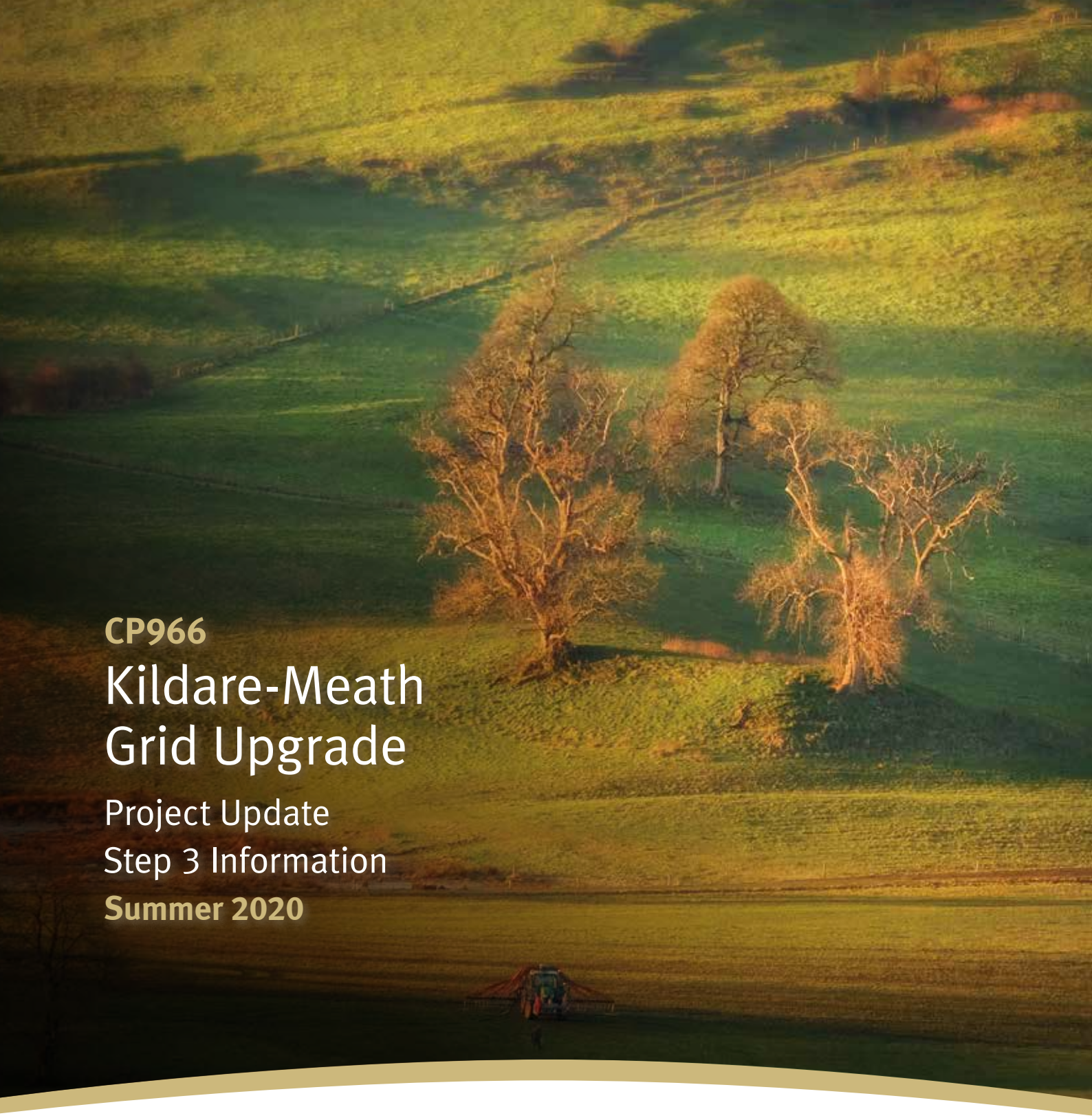

CP966

Kildare-Meath Grid Upgrade

Project Update
Step 3 Information

Summer 2020

EIRGRID

The current. The future.

Who are EirGrid – and what do we do?

EirGrid as an organisation is responsible for a safe, secure and reliable supply of electricity – now and in the future.

We develop, manage and operate the electricity transmission grid. This grid brings power from where it is generated to where it is needed throughout Ireland. We use the grid to supply power to industry and businesses that use large amounts of electricity. The grid also powers the distribution network and supplies the electricity you use every day in your homes, businesses, schools, hospitals and farms.

About this update

This update is for you as stakeholders, communities, landowners and members of the public interested in finding out more about the Kildare-Meath Grid Upgrade (also called Capital Project 966).
This document provides information about the project, and we hope it will help when we consult with you this autumn. We are on Step 3 of a six-step process (see page 3), and we will consult with you at each step. Please read this document carefully to understand our thinking and how you can give us your feedback in autumn.

This document provides up-to-date information on the project, including:

- what it is,
- its benefits for Ireland,
- our six-step approach to developing the electricity grid,
- what has been learned on the project so far,
- technology involved and studies done,
- the five options being considered, and
- next steps and how you can get involved.

Please note that the project timeline may change depending on developments relating to COVID-19.

What is the Kildare-Meath Grid Upgrade?

The Kildare-Meath Grid Upgrade will add or upgrade a high-capacity electricity connection between Dunstown substation in Kildare and Woodland substation in Meath.

The upgrade will help to more effectively transfer power to the east of the country and distribute it within the electricity network in Meath, Kildare and surrounding counties.

The project is essential to meet the Government of Ireland's Climate Action Plan target of 70% renewable energy generation by 2030, this includes transporting electricity from offshore renewable sources. It will also help meet the growing demand for electricity in the East. This growth is due to increased economic activity and the planned connection of new large-scale IT industry infrastructure in the region.

A significant number of Ireland's electricity generators are in the South and South West, where many wind farms and some modern electricity generators are. The power they generate needs to be transported to where it is needed.

Power is currently transported across the country on two high-voltage power lines from Moneypoint in Clare to the Dunstown substation in Kildare and Woodland substation in Meath.

Transporting more electricity on these lines could cause electricity supply problems throughout Ireland, particularly if one of the lines is lost (where power is out) unexpectedly.

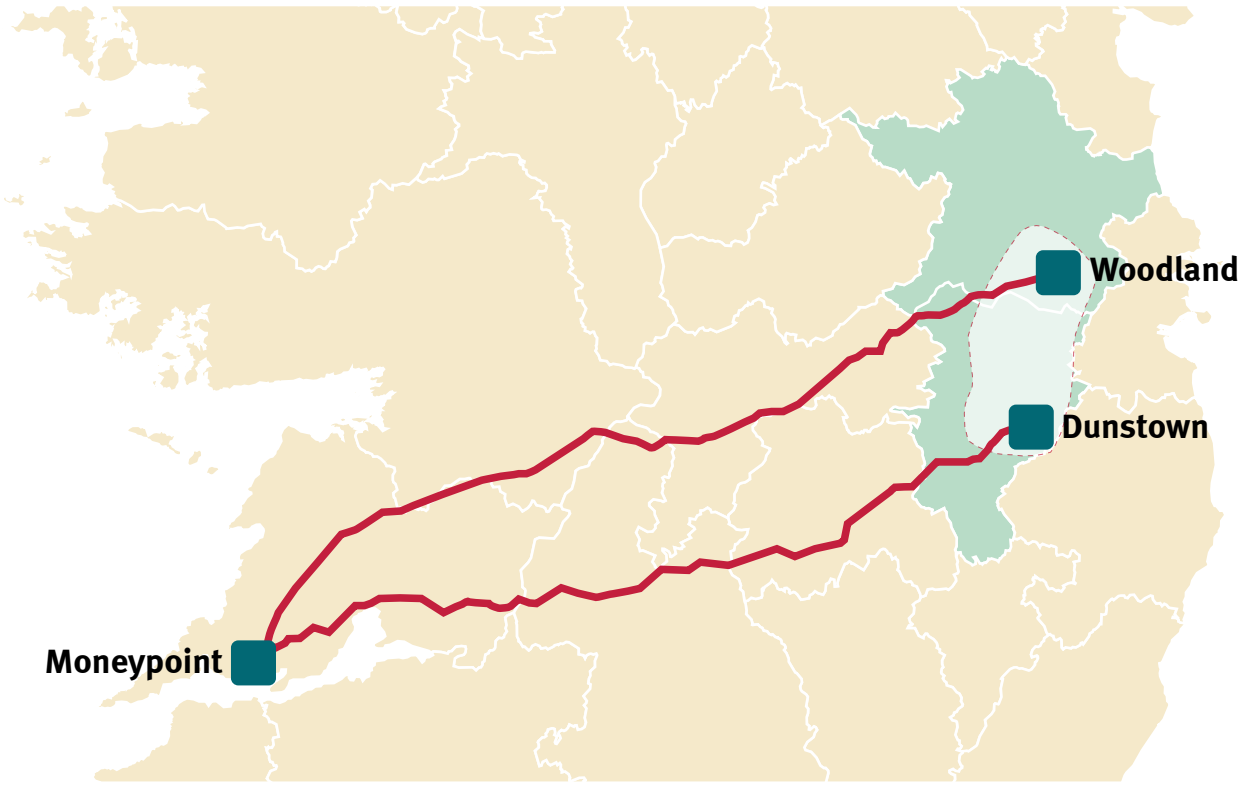

Figure 1: The connections from Moneypoint to Dunstown and Woodland with the study area between Dunstown and Woodland highlighted

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
See page 12

Our six-step approach

We have a six-step approach to gathering and understanding your and other stakeholders' views during this process. You can help us identify any potential issues now by getting involved and sharing your views on the different options when developing the electricity grid put forward in this document.

EirGrid's Have Your Say publication outlines our renewed commitment to engage with, and listen to, stakeholders. It outlines our detailed six-step approach to developing projects, and how you can get involved at every step. You can get a copy of Have Your Say at **www.eirgridgroup.com**.

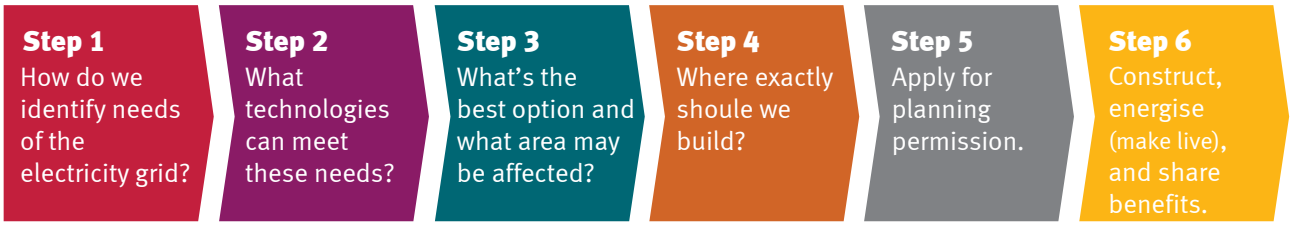

Figure 2: Our six-step approach to developing the electricity grid

This six-step approach to public consultation underpins all communications we have with you on the Kildare-Meath Grid Upgrade. This approach guides how we:

- Engage and consult with stakeholders and communities;
- Explore options fully; and
- Make more informed decisions.

This project is currently in Step 3:

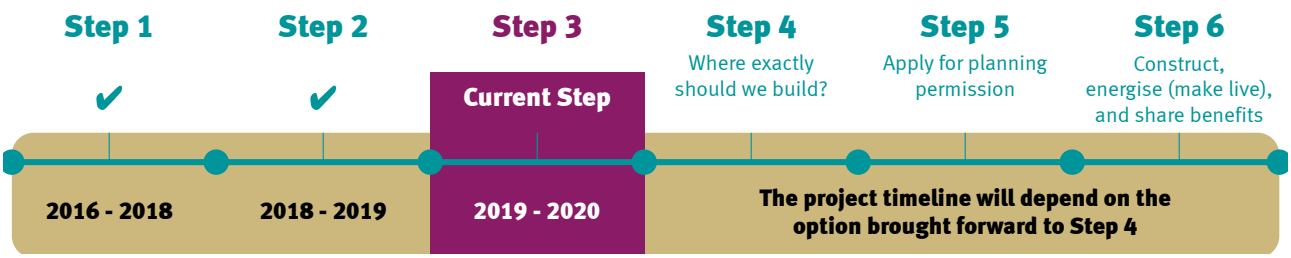

Figure 3: Our six-step timeline for the Kildare-Meath Grid Upgrade

What has happened so far?

In Step 1, we identified the need for the Kildare-Meath Grid Upgrade.

In Step 2, we compiled a shortlist of best-performing technical options, which went out for public consultation between November 2018 and February 2019. Four of those options were taken forward to Step 3 in April 2019.

In Step 3, we have re-confirmed the need for the project. We have also been investigating the shortlisted options to strengthen the electricity network between Dunstown and Woodland.

The shortlist we have been working on is as follows:

1. Connect two existing 220 kV overhead lines and up-voltage to 400kV;
2. Build a 400 kV overhead line;
3. Build a 220 kV underground cable;
4. Build a 400 kV underground cable.

As we investigated option 4, we identified that the cable would perform differently depending on its construction (if this option was chosen). So we split this option into two separate options:

4a. Build a new single conductor 400 kV underground cable in one route;
4b. Build a new 400 kV underground cable using two new conductors in two separate routes.

This means we are investigating five options in total.

Technology that may be used in the project

There are different technology options that we can use to strengthen the electricity network between Dunstown and Woodland. Developing these may mean we have to install more circuits and equipment, or use as much of the existing electricity transmission infrastructure as possible with some necessary upgrades.

The up-voltage option (option 1) would use a new technology, which would enable the existing 220 kV towers to be modified or replaced. The 220 kV conductors would need to be replaced with a 400 kV conductor to create a new Dunstown – Woodland 400 kV circuit.

The underground cable and overhead line options would create a new circuit between Dunstown and Woodland.

Electricity current in the project

We will use an electricity current called High Voltage Alternating Current (HVAC). This form of electricity transmission is used internationally in electricity networks and in Ireland. This current can travel over long distances and can reduce the amount of electricity that is lost in transmission.

Figure 4: The five categories we use to assess options with your feedback

Completing of studies

So far in Step 3, we have finished new investigations. These add to those we did in Steps 1 and 2. We are now assessing and comparing these investigations under five categories:

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

When we have finished assessing and comparing, we will publish our recommended emerging best performing option and consult on this with you in autumn. We will put your feedback at the heart of our process. We consider your feedback before confirming what the best performing option is.

Outcomes for Step 3

The expected outcomes (results) of Step 3 are to:

- Identify an emerging best performing option and consult with you in autumn;
- Publish a consultation report on the feedback we get in winter; and
- Announce a best performing option to take into Step 4 in winter.

This step will **not** identify where we will build electricity infrastructure. This will be done in Step 4.

The study area

This is the proposed area within which the electricity infrastructure for The Kildare-Meath Grid Upgrade will be built. The option taken forward at the end of the six-step process will happen within the study area shown in figure 5 by the red dashed line.

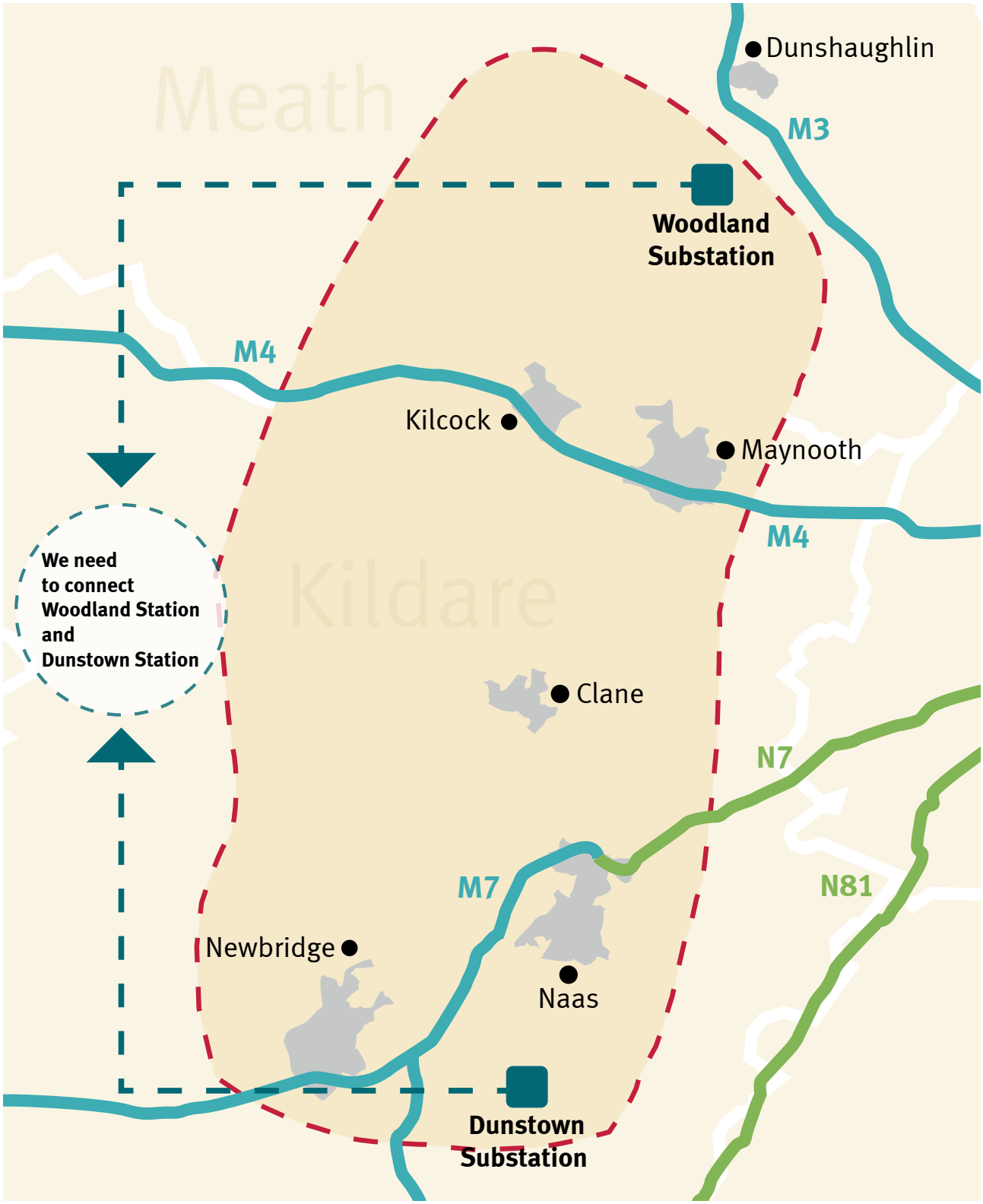

Figure 5: The Kildare-Meath Grid Upgrade Study Area

Option 1: Connect two existing 220 kV overhead lines and increase voltage to 400 kV

This option would use existing route corridors and infrastructure (like lines and towers) as much as possible to create a 400 kV overhead line (OHL) between Dunstown substation and Woodland substation. A route corridor is a 'path' through the land that is already approved and used to transfer energy.

Two existing 220 kV circuits would be used for this option. They are:

- Gorman – Maynooth 220 kV circuit; (blue line in figure 6)
- Dunstown – Maynooth (2) 220 kV circuit. (green line in figure 6)

The towers and conductors on the existing circuits would be replaced or modified so they could handle a higher capacity and voltage (400 kV).

At the moment, the Gorman and Dunstown circuits connect into Maynooth. If we were to create a new circuit from Dunstown to Woodland, we would need to connect the two existing circuits outside the Maynooth station.

We would also need to modify the Gorman-Maynooth 220 kV overhead line circuit to add a 'turn in' to the Woodland station.

This would create two new circuits into the Woodland station:

- a Gorman-Woodland circuit connected at 220 kV;
- a circuit heading towards Maynooth from Woodland at 400 kV.

This new section going south from Woodland to Maynooth would be used for the 220 kV to 400 kV increased voltage option.

The Dunstown-Maynooth (2) circuit is currently connected at 220 kV in Dunstown station. We would need to modify it to connect to the 400 kV busbar at Dunstown station. A busbar is common connection point for several power lines.

This option is illustrated in figure 6.

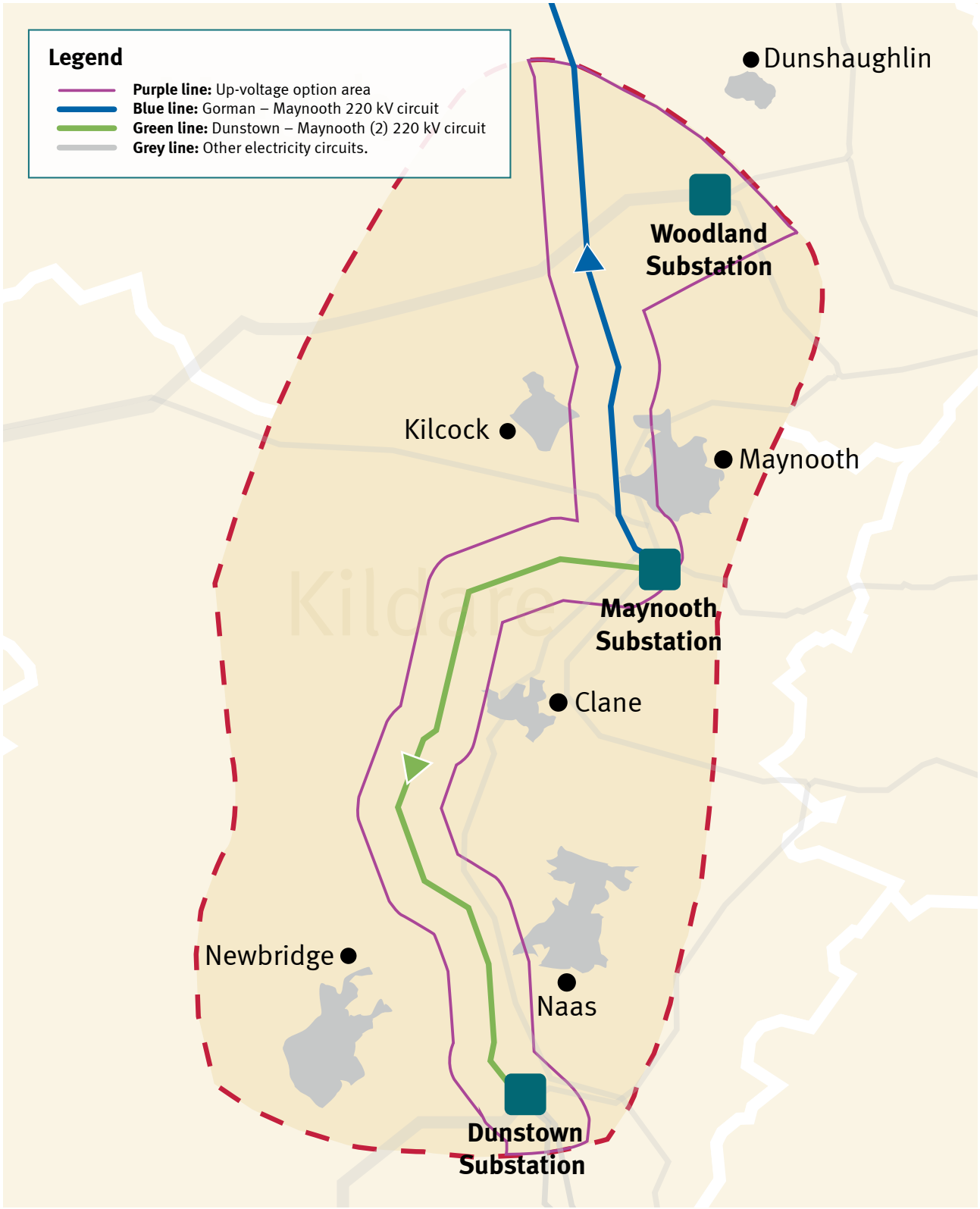

Figure 6: The up-voltage option study area in purple with the Gorman-Maynooth line and the Dunstown-Maynooth line highlighted

Option 2: Build a 400 kV overhead line

Option 2 would involve building a new 400 kV overhead line to link the Dunstown substation and Woodland substation.

This new 400 kV line would use towers (pylons) for the whole route. The tower type would be the same, or they would look the same, as the towers used on the existing 400kV circuits.

For this option, we would also need to work on the Dunstown and Woodland stations, so we could connect the overhead line.

Option 3: Build a 220 kV underground cable

For option 3, we would build a 220 kV underground cable to link the Dunstown substation and Woodland substation.

Previously in Step 2 of this project, we were unsure if a cable option would be technically feasible due to the length of the cable involved. During Step 3, we have investigated this and found that we could address any issues that would arise.

Our investigations show that a 220 kV cable would generally have less technical issues to address compared with a 400 kV cable.

We prefer to install underground cables in the road network (as opposed to through green fields or similar). This allows for easy access if the cable needs repair or maintenance. To achieve electricity transmission using alternating current (AC), three cables would be required for each circuit. We call these phases. This is the same for both overhead line and underground cables. One cable per phase (AC cable) would be needed. This means that three cables would make up one circuit.

These cables would be laid in the same 4-metre wide trench in a road. The trench needs to be 4 metres to meet the required power carrying capacity (rating) of the circuit.

It is important to understand that the underground cable in Option 3 would carry less power compared to Option 2 (400 kV overhead line).

We would also need a temporary working area to carry out the installation. The cable would be laid in sections. While we were laying the cables, there would probably be local traffic restrictions.

For option 3, we would also need to work on the Dunstown and Woodland stations, so we could connect underground cables.

Option 4: Build a new single conductor 400 kV underground cable in one route

For Option 4, we would build a new 400 kV underground cable to link the Dunstown substation and Woodland substation.

Previously in Step 2 of this project, we were unsure if a cable option would be technically feasible due to the length of the cable involved. During Step 3, we have investigated this and found that we could address any issues that would arise.

Like the other underground options, we would install Option 4 in the road network. The 400 kV cable has the same diameter as the 220 kV cable (Option 3) and has the same installation needs.

It is important to understand that the underground cable in Option 4 would carry less power compared to Option 2 (400 kV overhead line).

The trench needs to be 4 metres to meet the required power carrying capacity (rating) of the circuit.

We would also need a temporary working area to carry out the installation. The cable would be laid in sections. While we were laying the cables, there would probably be local traffic restrictions.

For option 4, we would also need to work on the Dunstown and Woodland stations, so we could connect underground cables.

Option 5: Build a new 400 kV underground cable using two new conductors in two separate routes

For Option 5, we would build a 400 kV underground cable to link the Dunstown and Woodland substations.

Previously in Step 2 of this project, we were unsure if a cable option would be technically feasible due to the length of the cable involved. During Step 3, we have investigated this and found that we could address any issues that would arise.

Like other underground options, we would install Option 5 in the road network.

Option 5 would carry the same power rating as the overhead 400 kV line in Option 2.

We would use two separate routes between the stations – keeping the road network in mind. We would install a cable on each route.

The trench needs to be 4 metres to meet the required power carrying capacity (rating) of the circuit.

We would also need a temporary working area to carry out the installation. The cable would be laid in sections. While we were laying the cables, there would probably be local traffic restrictions.

For option 5, we would also need to work on the Dunstown and Woodland stations, so we could connect underground cables.

Community Benefit

We recognise electricity infrastructure projects impact on local residents and businesses. While the Kildare-Meath Grid Upgrade is being built, we will work to benefit communities as part of our community benefit policy.

The focus is often on projects to help the community. These could be:

- Community walkways like the one we did in Moyvane, Co. Kerry;
- Education initiatives like IT equipment for local schools;
- Environmental initiatives like installing beehives;
- Youth facilities like a playground;
- Sports facilities like a play pitch; and more.

We will seek your views on how to use the community funds we have for projects that would benefit your community. We encourage you to think about how your area could benefit from a Kildare-Meath Grid Upgrade community fund.

We will work in partnership with the community and grant-making specialists to decide how to manage and spend this fund.

Next steps and how you can get involved

This autumn, we will invite feedback on the five options for the Kildare-Meath Grid Upgrade. The consultation period will be publicised widely.

We will consider the feedback alongside of assessments carried out in Step 3. These will help determine the best performing option.

In Step 4 we will consult about where exactly the new infrastructure will be built. We expect this to be in 2021.

How can I get involved?

You can get involved in different ways. We will engage and consult at local level with members of the public, landowners, and local representatives from the study area. We will also speak to elected representatives, specialist representative groups, environmental and planning agencies.

We will publicise the consultation period and how to share your views widely in local newspapers, on radio and on social media.

Who can I contact?

If you would like to find out more information or give feedback on this project, you can contact **+353 (0)1 677 1700 or email KildareMeath@eirgrid.com**.

You can also contact our Community Liaison Officer **Eoghan O'Sullivan on +353 (0)87 247 7732**.

Step 3 at a glance

Step 1 Completed identifying needs of the grid.

Step 2 Completed identifying the technologies that 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 Apply for planning permission.

Step 6 Construct, energise (make live), and share benefits.

Step 3 At a glance

What's happening?

We are assessing and comparing five options to upgrade the electricity grid between Kildare and Meath.

How long will this take?

Step 3 will take us to the end of 2020 and into 2021.

What can I influence?

You will be able to influence which of the five options we decide to bring into Step 4. We want your feedback on which option you prefer.

What will we have decided at the end of this step?

At the end of this step, we will have decided a best performing option.

How can I get involved?

You can get involved in different ways. We will engage and consult at local level with members of the public, landowners, and local representatives from the study area. We will also speak to elected representatives, specialist representative groups, environmental and planning agencies.

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