

## Electricity imports and exports

Low carbon electricity can be imported as well as being produced in Ireland. Imports could come from sources such as geothermal energy from Iceland, wind energy from Norway's North Sea, or solar energy from southern Europe or northern Africa. These other countries could oversupply electricity and then export it to Ireland.

### Trajectory 1

Level 1 assumes that in 2050 Ireland imports no electricity from abroad.

### Trajectory 2

Level 2 assumes that in 2050 Ireland imports 3 TWh/y of electricity (similar to today's level of imported electricity from UK for balancing).

### Trajectory 3

Level 3 assumes that in 2050 Ireland imports 6 TWh/y of electricity. The current capacity of the interconnector would be sufficient to deliver this energy.

### Trajectory 4

Level 4 assumes that in 2050 Ireland imports 10 TWh/y of electricity. The capacity of the interconnector would have to increase to 1.4 GW, consistent with current plans for grid expansion.<sup>53</sup>

## Electricity exports

Conversely, an oversupply of renewable electricity generated domestically could be exported elsewhere, which would require improving the electricity connections with Europe. While the trajectories in this model have been developed in line with domestic emissions targets and energy demand in 2050, it is possible to generate a large of over-supply of renewable electricity if multiple renewable levers are chosen together. Over-production of low carbon electricity in the model is assumed to be consumed abroad and the interconnector necessary to access these markets is calculated and included. In an extreme maximum electricity supply (where all supply sectors are set at trajectory 4) and minimum domestic demand scenario, up to an excess of 80 TWh/yr of clean electricity could arise. To deliver this energy, the capacity of the interconnector with Europe would have to be increased by 8 GW.

Figure 31. Proposed route for future interconnection between Ireland and France.

