In order to achieve net zero by 2050 we need to hit these targets

### Summary

#### 2020s
- Rapidly build renewable generation to reach 98% renewable electricity; phase out coal
- Ramp up electrification supported by targeted thermal gen., demand flexibility and storage

#### 2030s
- Turbocharge electrification through a continued fast build out of renewable electricity
- Develop new flexible renewables, storage options and a highly automated demand-side

#### 2040s
- Continue electrification at pace to support close to full decarbonisation of key sectors
- Significantly scale up batteries and further embrace new smart demand technologies

### Electrification enablers

#### 2020s
- Rapidly electrify light vehicle fleet
- Commence large-scale transition of low/med temp. heat to electrification and biomass

#### 2030s
- Phase out ICE vehicles; transition heavy vehicles to electric/hydrogen
- Transition low and medium temp. processes

#### 2040s
- Electrify almost all land transport
- Scale up elec./hydrogen for high temp. processes; phase out fossil fuels in buildings

<table>
<thead>
<tr>
<th>Additional capacity</th>
<th>Additional generation</th>
<th>% renewable electricity</th>
<th>Transmission Investment</th>
<th>Distribution Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2020s</strong></td>
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<tr>
<td>4.8 GW</td>
<td>10.6 TWh</td>
<td>98 %</td>
<td>$8 billion</td>
<td>$22 billion</td>
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<tr>
<td><strong>2030s</strong></td>
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<td><strong>2030s</strong></td>
</tr>
<tr>
<td>5.3 GW</td>
<td>10.8 TWh</td>
<td>99 %</td>
<td>$10 billion</td>
<td>$25 billion</td>
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<tr>
<td><strong>2040s</strong></td>
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<td><strong>2040s</strong></td>
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<td><strong>2040s</strong></td>
</tr>
<tr>
<td>5.0 GW</td>
<td>12.8 TWh</td>
<td>99 % (Option to achieve 100% at low cost)</td>
<td>$11 billion</td>
<td>$24 billion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional peak demand needs</th>
<th>End-of-decade dry year energy contribution</th>
<th>End-of-decade emissions abated by electricity sector (CO₂-e per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2020s</strong></td>
<td><strong>2020s</strong></td>
<td><strong>2020s</strong></td>
</tr>
<tr>
<td>1.1 GW</td>
<td>7.6 TWh</td>
<td>8.7 Mt</td>
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<tr>
<td><strong>2030s</strong></td>
<td><strong>2030s</strong></td>
<td><strong>2030s</strong></td>
</tr>
<tr>
<td>0.8 GW</td>
<td>8.7 TWh</td>
<td>15.6 Mt</td>
</tr>
<tr>
<td><strong>2040s</strong></td>
<td><strong>2040s</strong></td>
<td><strong>2040s</strong></td>
</tr>
<tr>
<td>1.2 GW</td>
<td>9.4 TWh</td>
<td>22.2 Mt</td>
</tr>
</tbody>
</table>
These recommendations need to be implemented this decade

Support accelerated renewables development
- Ensure consenting frameworks enable rapid renewable deployment via RMA reform
- Continue to improve consenting frameworks to enable rapid renewable deployment

Encourage the right energy and capacity mix
- Progress work to deepen contract markets
- Progress investigations into mechanisms to extend reserves
- Implement an emergency reserve scheme
- Inflation index scarcity pricing and Customer Compensation Scheme
- Implement deepened contract markets
- Implement mechanisms to extend reserves
- Review efficacy of emergency reserve scheme
- Review price signals to assess sufficiency

Scale up transmission and distribution network investment
- Accelerate approvals and consenting for key enabling transmission projects
- Ensure distribution funding for 2026-30 is sufficient to enable electrification
- Deliver key enabling transmission projects
- Implement efficient distribution funding flexibility mechanisms to enable investment where unforeseen needs arise

Enable a smart electricity system
- Improve distribution peak pricing signals and smart managed tariffs
- Establish roadmap for formation of competitive flexibility markets
- Update regulatory frameworks to support virtual network investment
- Mandate default off peak electric vehicle charging
- Continue to improve distribution peak pricing signals and smart managed tariffs
- Implement roadmap for formation of competitive flexibility markets
- Implement TOTEX funding framework and new innovation mechanisms
- Increase network investment in orchestration, including visibility and operation

Drive decarbonisation through electrification
- Further strengthen ETS and policies to support transport and heat decarbonisation
- Establish ban on ICE vehicles from 2032-2035
- Extend and expand GIDI funding if required

Enable the implementation of this roadmap
- Develop joint industry statement of intent and action plan
- Implement roadmap and incorporate into National Energy Strategy
- Continue roadmap implementation and monitor progress
- Evolve and update roadmap as context evolves