# Power Challenge
## Move – electricity's journey

| Video transcript |
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| Kia ora e hoa mā. Guess who's back again? It's me, Gene.<br>You've learnt the ins and outs of electricity generation. And I bet you're thinking, but Gene – once electricity is generated, how does it get to our homes and communities?<br>Well, I'm glad you asked, because I'm here to explain just that. |
| Electricity goes on an epic journey to get to our homes and communities.<br>And there's one special system that makes it all possible – the national power grid. |
| The national grid connects the electricity that's generated at power stations to the places that need it – like our homes, our schools and our hospitals.<br>But how?? |
| Well, let's take a look… |
| Our journey starts at power stations, where electricity is generated.<br>There are lots of different power stations – you have things like wind farms, solar farms, hydro stations and geothermal stations generating renewable energy. |
| These power stations connect to a transformer. A transformer is used at power stations to increase or 'step up' the voltage of electricity.<br>Voltage is the force that pushes electricity so it can move through a circuit.<br>The voltage of the electricity needs to be increased to help it move through transmission lines. |
| Transmission lines are conductors – remember that word?<br>They provide a path for electricity to flow all over Aotearoa. |

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| And those big towers that hold transmission lines high above the ground? Those are called pylons.<br><br>We have over 12,000km of transmission lines in Aotearoa. That's over 7x the length of the entire country! |
| Once the electricity has travelled where it needs to go, it reaches a substation. A substation 'steps down' the voltage of electricity so it's safe to use in your home.<br><br>We have 170 substations in Aotearoa, all across the country. |
| Substations connect to local distribution networks. These networks deliver power to the places that need it through overhead power lines or underground cables. |
| And there we have it! Electricity has reached its final destination – our homes, our schools, hospitals and many other community buildings. |
| Now it's ready to use at the flick of a switch! |
| Did you stick with me? Good!<br><br>It's time to test who was listening the closest to the steps in electricity's journey.<br><br>Get ready to compete in the great grid race.<br><br>May the most power-ful team win.<br><br>Karawhiua! |