Energy News and ABB

# New Zealand Electricity Survey

## PART ONE – 2019 – SURVEY RESULTS

ENERGY NEWS
www.energynews.co.nz

ABB

# Smarter Mobility

## For transport of the future, today

In 2017 there were more than 2 million electric vehicles worldwide and the market is growing, with electric car stock set to range between 9–20 million and 50% of new buses in Europe to be electric from 2020 onwards. Electric vehicles require power, and ABB offers a total solution, from reliable DC fast charging stations for cars to innovative on-demand electric bus charging systems.

### Market leading position

**No. 1**
in connected EV charging infrastructure

**>6,000**
chargers installed **worldwide**

**100%**
**connectivity: ABB Ability™** cloud-based technology and real time data for remote and proactive control

### EV charger benefits

ABB chargers provide
**99%** **uptime**

**3–6 minutes**
re-charging time for buses

**10–12**
**minutes** charging time for 300 extra kilometers

**2.6 million**
tons less $CO_2$ per year, equivalent to about 10 million cars

ABB has years of experience in creating, installing and maintaining charging infrastructure, including several nationwide charger networks. We are laying the foundations for a future of smarter, reliable, and emission-free mobility, accessible by everyone, everywhere.

**abb.com/smartermobility**

# Highlights

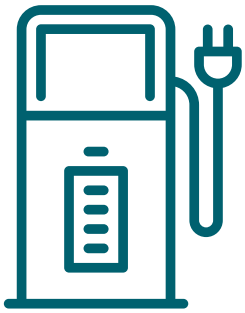
Results from Part One of the 2019 *Energy News* and ABB Electricity Survey are now in. We had more than 200 respondents complete the six-question survey, providing an insight into the sector's thoughts on decarbonising New Zealand's electricity sector.

Thanks to our industry advisory panel, who are helping to develop the surveys this year. Part Two is due to go live in June.

In response to Part One of our survey, the sector thought:

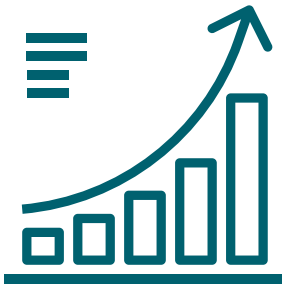
## Industry needs to go electric

Displacing non-renewable energy through electrification of transport and process heat is the best way NZ can exploit its renewable advantage



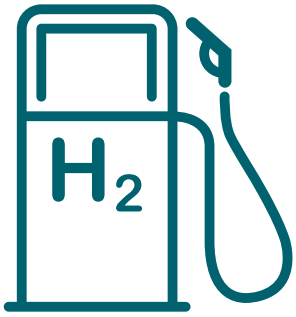
## EVs are here to stay

Growth of electric vehicle registrations will likely follow the S-curve trend post-2021



## Prices will spike

Expect greater price volatility and security risk once Genesis says good-bye to burning coal




## Hydrogen remains questionable

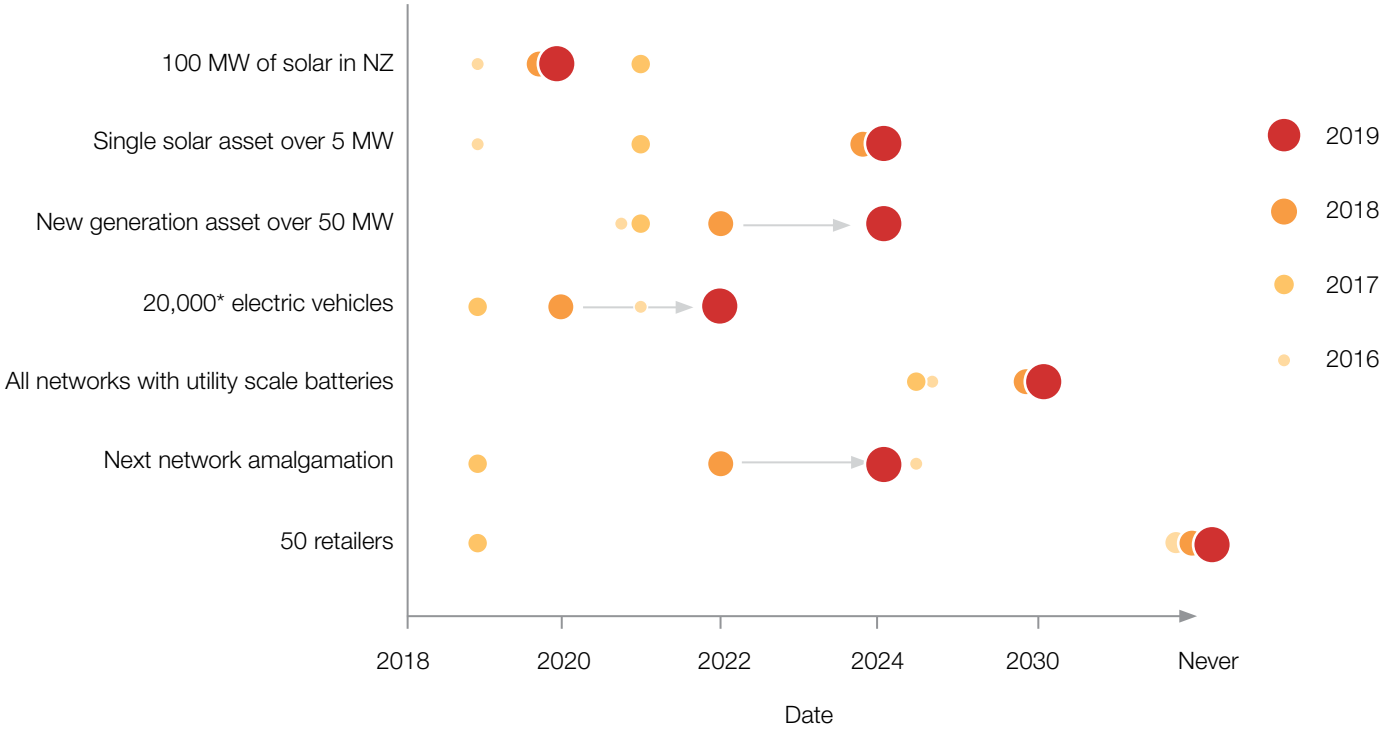
The economics don't stack up at the moment, but that might change

# Decarbonisation

## Timeline for change

**Question 1**

For the fourth year running we want you to gaze into the crystal ball yet again and tell us when you think this country will hit the following milestones. How have your views changed over time?




| Milestone | 2020 | 2022 | 2024 | 2030 | NEVER |
|---|---|---|---|---|---|
| 100 MW of solar installed? (90 MW as of 31 Jan 2019) | **58%** | 26% | 8% | 6% | 2% |
| A single solar project over 5 MW? (Yealands is the largest at 0.5 MW) | 6% | 29% | **31%** | 27% | 7% |
| A new generation asset over 50 MW? | 18% | 26% | **28%** | 21% | 7% |
| 20,000 electric vehicles? (12,197 as of 31 Jan 2019) | 31% | **49%** | 14% | 5% | 1% |
| All networks with utility-scale batteries? (3 in 2018) | 1% | 6% | 24% | **47%** | 22% |
| Next lines company amalgamation? | 12% | 28% | **30%** | 15% | 15% |
| 50 retail brands? (40 as of 31 Jan 2019) | 6% | 25% | 25% | 9% | **35%** |

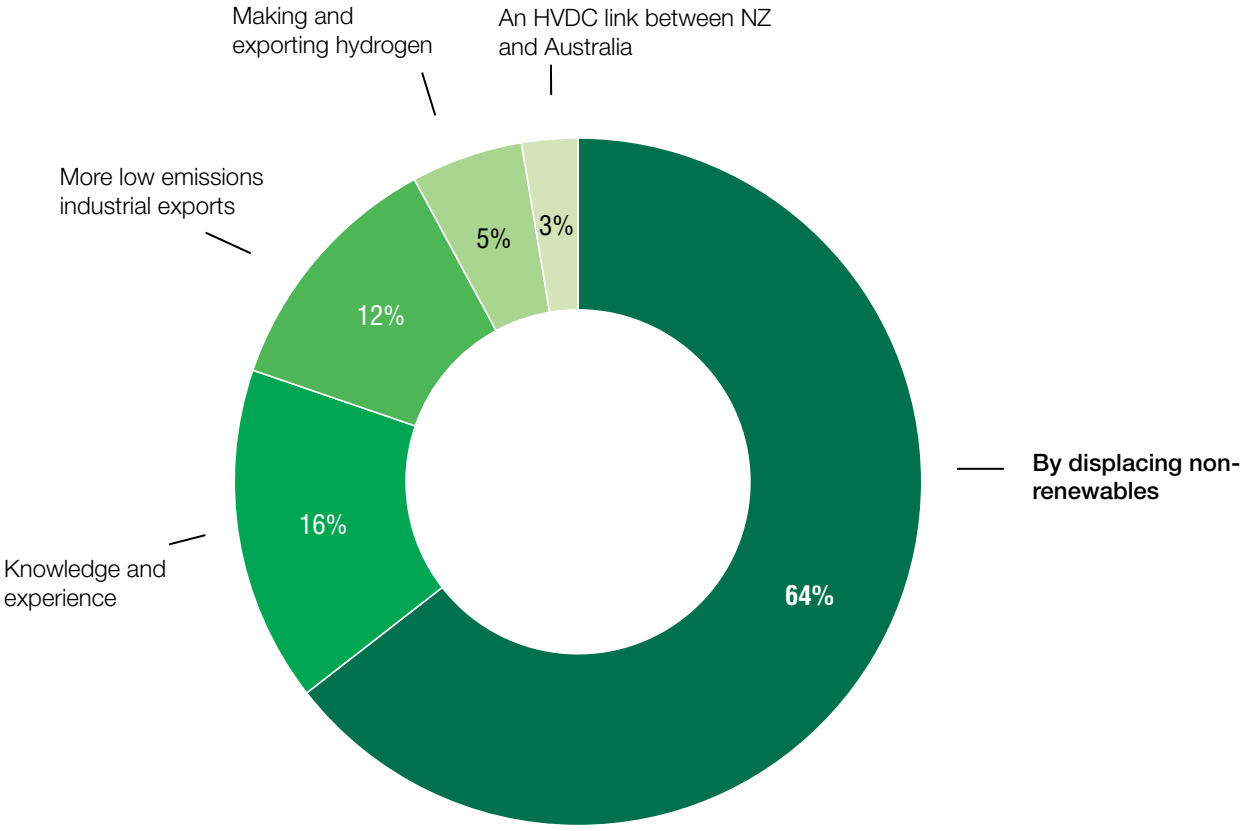
** We increased the number of retailers to 50 in 2018, from 40 in 2016 and 2017.*

** This year we increased the number of EVs to 20,000 from 10,000 in previous years.*

# Decarbonisation

## Question 2

This country has a strong renewable electricity standing when compared globally. What is the best way to exploit this renewable advantage? Choose one option you most agree with:

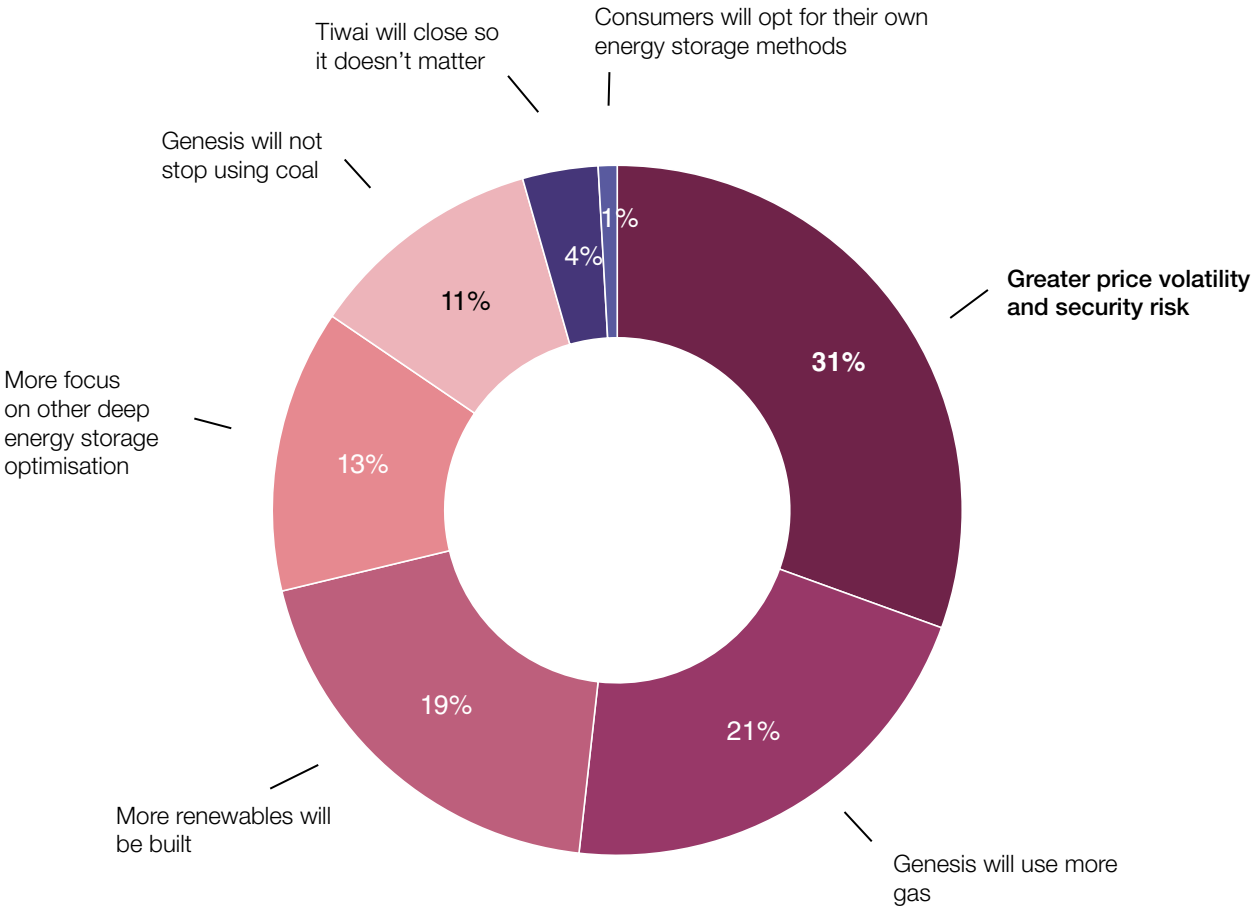



- **By displacing non-renewable energy through electrification of transport and process heat – 64%**
- Knowledge and experience - such as New Zealand-based companies working offshore to help develop renewable projects – 16%
- By making more low emissions industrial exports like aluminium – 12%
- By making hydrogen and exporting it to markets that have the infrastructure to use it – 5%
- Linking New Zealand and Australia's electricity markets via an HVDC link – 3%

# Decarbonisation

## Question 3

Genesis has indicated it will halt the use of coal for power generation by 2030. Which of the following do you think will most likely happen after this? Choose one option:

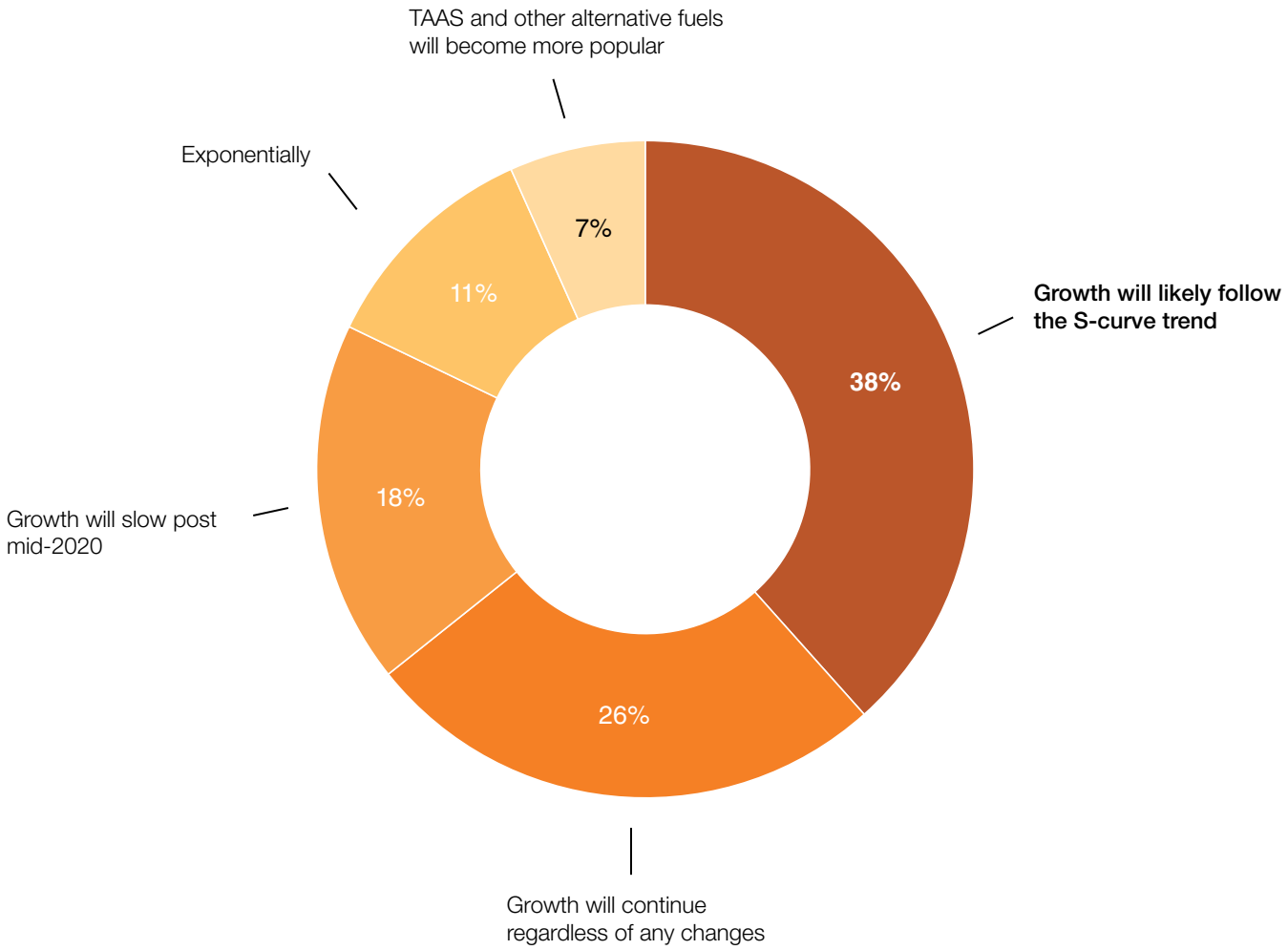



- **There will be greater price volatility and security risk if renewables do not have a thermal back up – 31%**
- Genesis will replace its coal use with gas – 21%
- More renewable generation will be built to cover the shortfall – 19%
- There will be a bigger focus on optimising the performance of other deep energy storage options – 13%
- Genesis will not stop using coal by then – 11%
- The Tiwai aluminium smelter will cease operation around the same time so it won't be a problem – 4%
- Wealthy consumers might become less confident in centralised security of supply and opt to use their own storage methods, such as diesel generation or batteries – 1%

# Decarbonisation

## Question 4

We are moving ever closer to the deadline year for the national target of 64,000 electric vehicles on New Zealand roads by 2021. As of January 2019 there were more than 12,000 registered. How do you see EV registrations tracking post-2021? Choose one option:

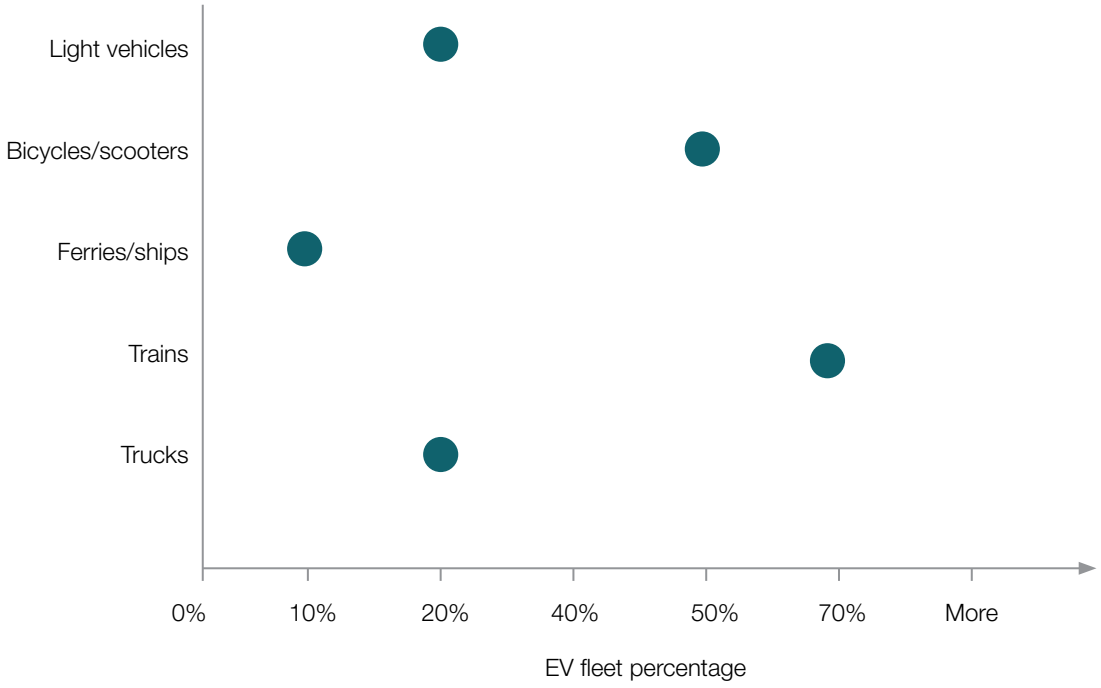



- **Growth will likely follow the S-curve trend – 38%**
- All major producers are pursuing electric drive trains and abandoning ICE - it doesn't really matter, the genie is out of the bottle – 26%
- Growth will slow once the road user charge exemption for EVs expires in June 2020 – 18%
- Exponentially – 11%
- EV registrations will be overtaken by the growth of transport-as-a-service offerings or other alternative fuels – 7%

# Decarbonisation

## Question 5

On the subject of electrifying transport - for each of the different transport modes, choose what percentage of the fleet you think will be electric by 2035:

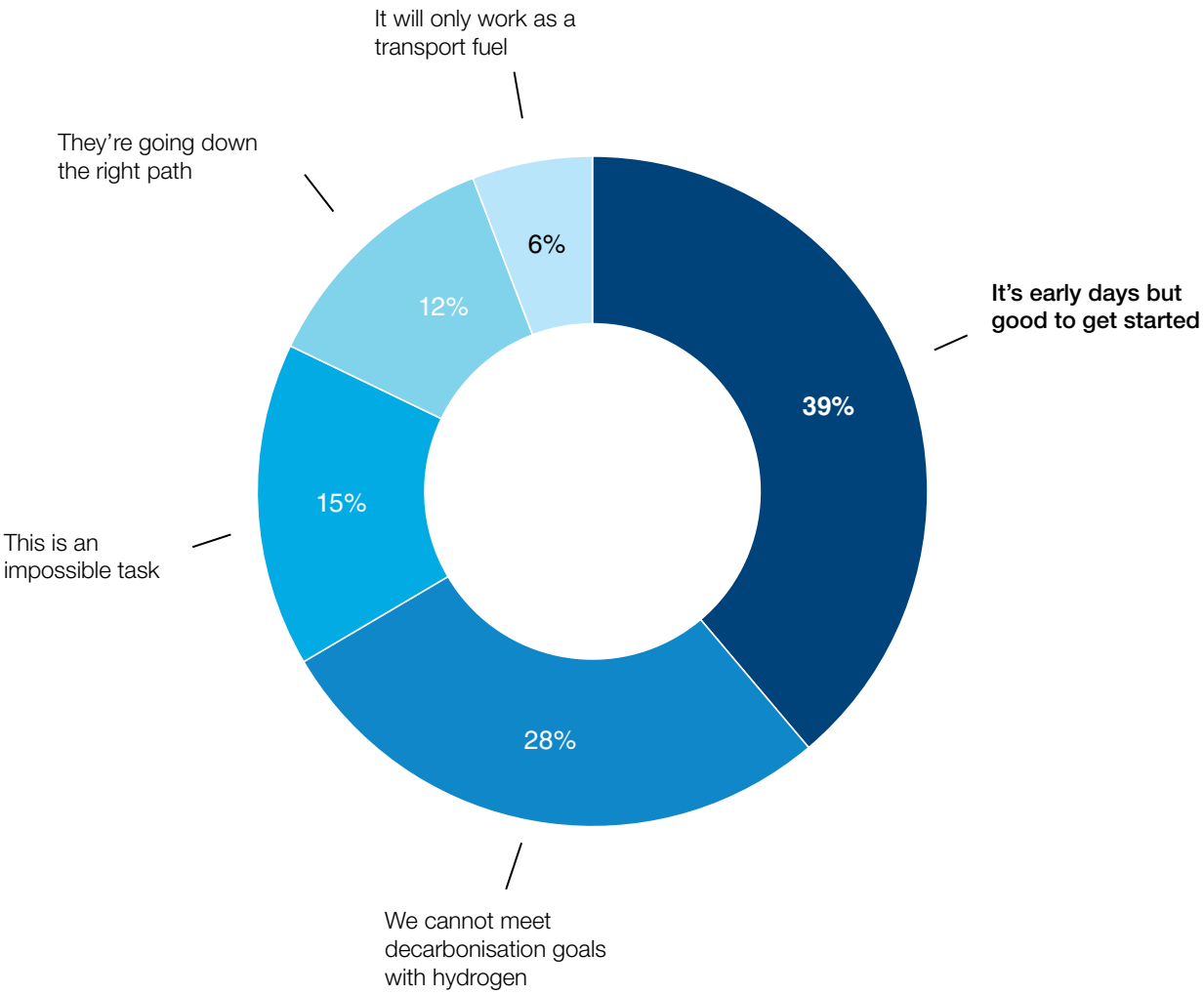



| Milestone | 0% | 10% | 20% | 40% | 50% | 70% | More |
|---|---|---|---|---|---|---|---|
| Light vehicles | 1% | 8% | **25%** | 24% | 20% | 17% | 5% |
| Bicycles/scooters | 1% | 7% | 16% | 17% | **30%** | 21% | 8% |
| Ferries/ships | 28% | **41%** | 22% | 3% | 4% | 1% | 1% |
| Trains | 4% | 14% | 17% | 19% | 13% | **20%** | 13% |
| Trucks | 11% | 26% | **31%** | 16% | 8% | 7% | 1% |

# Decarbonisation

## Question 6

The Government has strong aspirations to create a hydrogen industry in this country to help it meet its net zero carbon goals. What are your thoughts on this stance? Choose one option you most agree with:




- **I don't think the economics stack up yet, but it is good to get this ground work in place – 39%**
- Decarbonisation goals cannot be met by hydrogen and there are more economic ways to achieve a better outcome through electrification – 28%
- No country in the world has cracked this - what makes us think we can? We have been down this path before. It didn't work then, it won't work now – 15%
- They're going down the right path - this is a good way for us to lower emissions in the heavy transport fleet and in some power generation – 12%
- I see it only being successful as a transport fuel – 6%

# Further thoughts

Thanks to those who provided further thoughts on the survey's theme. Here are some of your comments below:

*"We have the technical ability and resources to decarbonise the electricity system while maintaining security of supply. The question is whether we are open minded enough and have the will to."*

*"Cut gas too soon, this means coal will be used for a much longer than necessary time."*

*"Government-led programmes are bound to fail. This process will only reach its goal with substantial technical break throughs and consumer demand."*

*"Hydrogen is likely to be of the energy system, finding a niche (which might be significant), but it will not meet all fossil fuel replacement needs. Of course it does not compare to the incumbent systems because they were less expensive and have benefited from a century of intense R&D and capital investment."*

*"The new paradigms will take off as soon as all the baby boomers retire from the power industry."*

*"The whole of the electrical industry is in need of a clean up. There are too many organisations contributing various ideas and achieving little."*

*"The industry is losing sight of diversity and resilience."*

## About ABB

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalisation with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products. As title partner of Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 135,000 employees. www.abb.com

## About Energy News

*Energy News* is New Zealand's online news and information service for the energy sector. The website was launched in 2008 and now boasts more than 5,000 readers every month from 300 subscribing organisations. Its readership consists of New Zealand energy sector organisations and service companies spanning the electricity, oil and gas, petroleum and alternative energy value chain.

The subscription-based site provides daily news, executive interviews, opinion and commentary. It also hosts a suite of information resources including two large databases of asset owners and energy resources. Other information includes 30-minute electricity prices, supply and demand monitoring, petroleum permit deadline summaries and an oil price monitor.

** Cover image: Auckland Museum's solar array*