nationalgrid

Our energy insights

Low carbon transport and future Thought Pieces

We were delighted to welcome 148 customers and stakeholders to the Future Energy Scenarios (FES) Conference afternoon sessions. Feedback from last year's conference indicated that our customers and stakeholders wanted to get more insight into how we carried out our modelling. Therefore this year we asked the attendees to build their own electric cars (EV) and Natural Gas HGV (NGVs) scenarios based around a simplified version of our models.

The challenge that we gave to the participants was to build scenarios of EVs and Natural Gas HGVs in 2030.

We asked a series of questions. They then gave us their considered views. This was done by a voting system, we used Sli.do[1]. The answers they gave were inputted into our simplified model to get three outputs:

- How many vehicles will there be in 2030 – for both EV and NGV
- What will be the annual consumption of these vehicles? – for both EV and NGV
- What will be the peak demand for EVs. – just for EV

However we did not throw them into the deep end from the start; we gave them some context – see the associated presentation.

Figure 1 The audience voting based on some contexts given in a presentation

The results from their deliberations were then compared to our FES analysis (see Figures 2 to 5).

As an additional question we also asked the audience what did they think the most common form of charger used in 2030 would be? The result is given in Table 1.

Table 1 Charger size in 2030

Charger size	%
Standard home 7 kW	39%
Large home 15 kW	16%
Current commercial 50 kW	9%
Large commercial 150 kW	20%
Huge commercial 300 kW	16%

[1] https://www.sli.do/

Figure 2 EV peak demand (session 1)

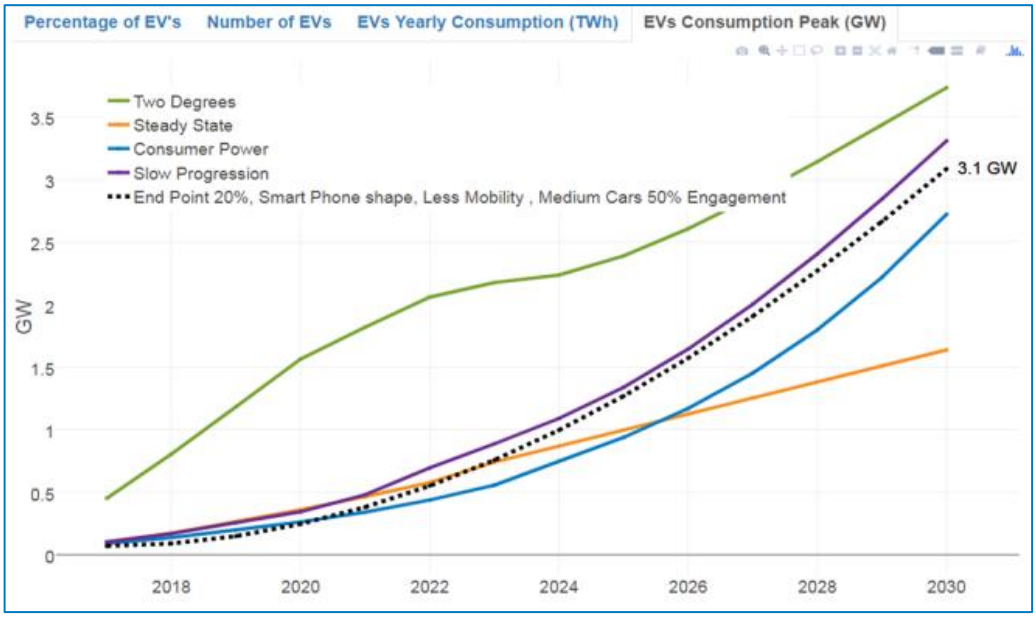
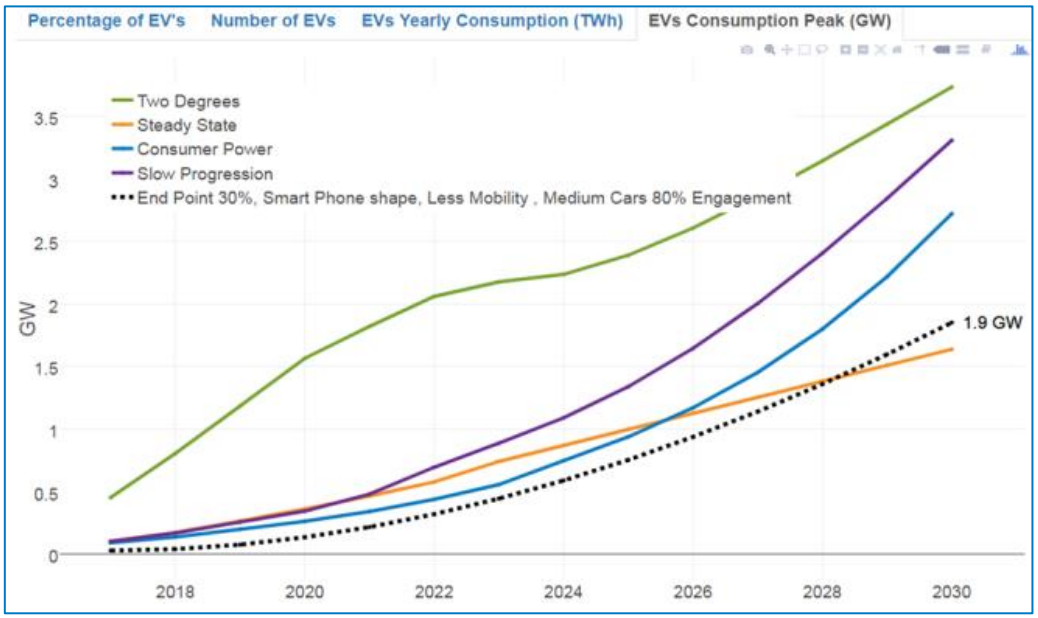


Figure 3 EV peak demand (session 2)



As can be seen the results from both session 1 and session 2, EV peak demands (Figure 1 and 2), lie with the FES range. However there is a reasonable difference between the two sessions. Interestingly the two groups thought the number of EVs was the same, the take up rate was the same, the mileage rate the same, the car size the same, but the level of engagement of the consumer was different. The level of engagement accounts for the majority of the difference between the outcomes of the two sessions.

The NGV session 1's result (Figure 4) lies just outside of the FES range, but session 2's result (Figure 5) did not.

Since this straw poll took place the government has announced its decision to ban the sale of all new conventional petrol and diesel cars and vans by 2040. It is likely that had this been known at the time the results have been different. This is a fast evolving field but this announcement does fall within the FES range.

Figure 4 NGV annual demand (session 1)

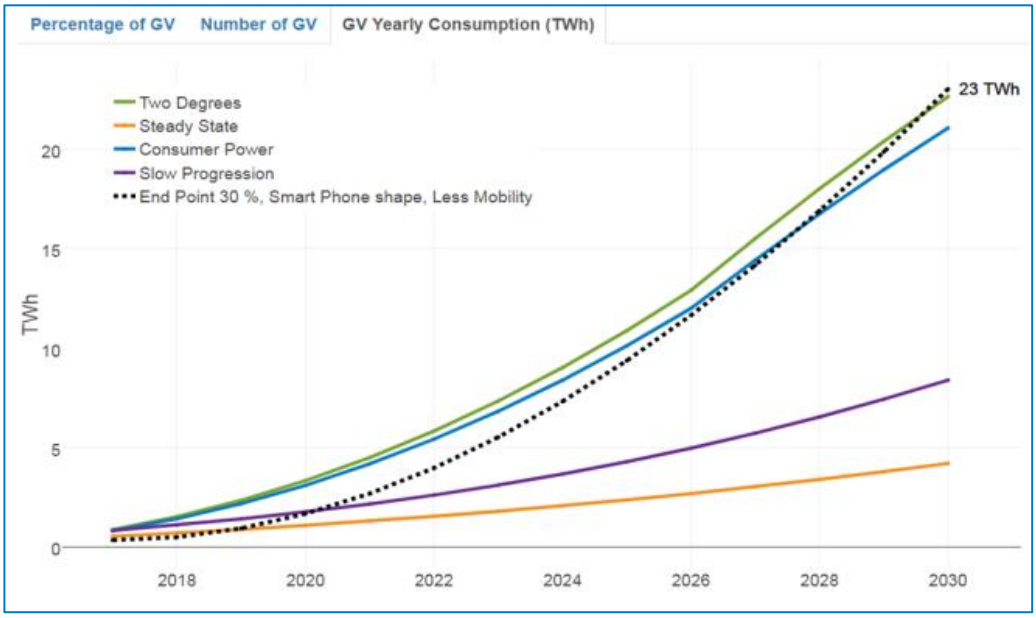
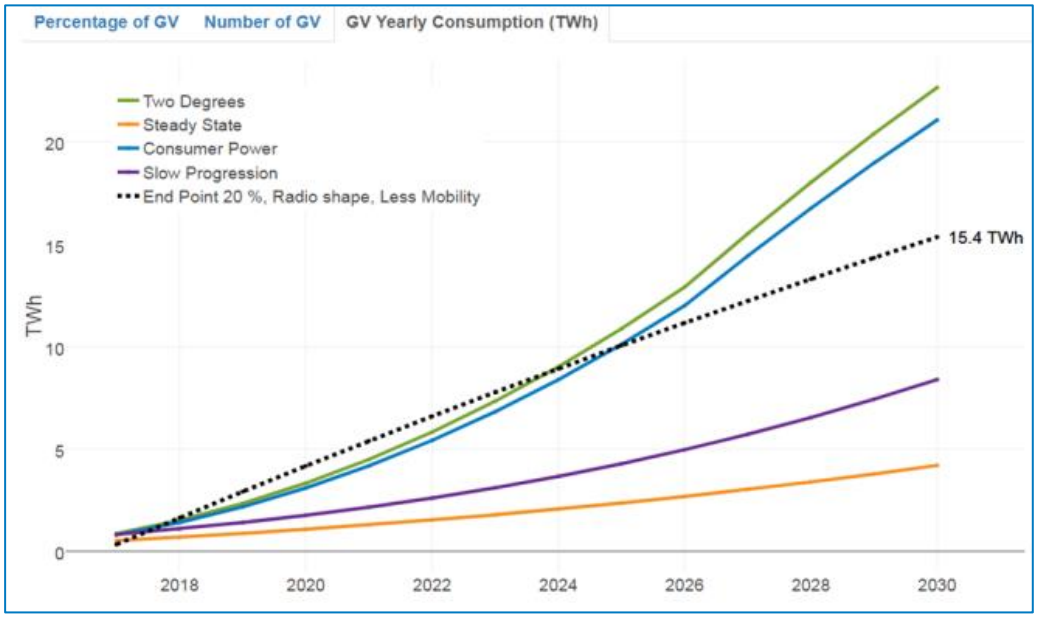


Figure 5 NGV annual demand (session 2)



What is of interest, and of fundamental importance to the future, has been highlighted in this exercise and that is; how engaged will consumers be to moving away from peak time charging?

Further, if the infrastructure for diesel supplies is diminished for cars will this accelerate its decline for HGVs? This and questions we intend to explore in our Thought Piece series in the coming months.

If you have any further comments or ideas we would be delighted to hear from you.

So please get in touch via our mailbox: transmission.ukfes@nationalgrid.com

Annex - Full results

1. What % of cars will be EVs by 2030?

Options	Session one results	Session two results
5%	9%	9%
10%	20%	20%
20%	**34%**	27%
30%	22%	**30%**
40%	5%	7%
50%	11%	7%

2. What % of HGVs will be natural gas vehicles by 2030?

Options	Session one results	Session two results
5%	13%	14%
10%	14%	23%
20%	22%	**28%**
30%	**28%**	19%
40%	17%	5%
50%	6%	11%

3. What will the route to 2030 look like for EVs?

Options	Session one results	Session two results
Washing machine	6%	5%
Smart Phone	**67%**	**56%**
Radio	11%	10%
VCR	16%	29%

4. What will the route to 2030 look like for natural gas HGVs?

Options	Session one results	Session two results
Washing machine	21%	20%
Smart Phone	**34%**	20%
Radio	23%	**34%**
VCR	23%	25%

5. How will the average distance travelled by cars change?

Options	Session one results	Session two results
More	19%	22%
Less	**56%**	**47%**
Same	25%	31%

6. How will the average distance travelled for HGV change?

Options	Session one results	Session two results
More	30%	10%
Less	**43%**	**64%**
Same	27%	25%

7. What will the typical size of an EV be in 2030?

Options	Session one results	Session two results
Small car	37%	25%
Medium car	**54%**	**58%**
Large car	5%	15%
Super-sized	3%	2%

8. How engaged are consumers around peak charging?

Options	Session one results	Session two results
80%	25%	**38%**
50%	**37%**	24%
20%	27%	25%
15%	12%	13%