4th and 5th December 2024
Atos, MidCity Place, London

Hackathon on Sustainable Laptop Battery Solutions

nationalgrid

NESO National Energy System Operator

circular computing™

Microsoft

DELL Technologies

nexthink

Atos

Teams

Members selected in each group to bring different perspectives

Team 6 'Development' collaborate with all the 5 teams

Kavi Pelpola, Atos
Katya Grennier, Atos

Team 1 Facilitator: Seb Vibert

Bryan Hill, Microsoft
Colin Sainsbury, Dell
Mark Ruby, National Grid
Sebastien Duprez, Nexthink
Simon Hardy, Atos
Vanessa Jones, NESO

Team 2 Facilitator: Rob Blanford

Andy Wallace, Atos
Arun Ulianchery, Nexthink
Carl Farmer, Microsoft
Lee Williams, Dell
Rob Thompson, National Grid

Team 3 Facilitator: Jafar Nabeel

Dan Dosanjh, Dell
Sam Franklin, Atos
Susan Fox, KPMG
Neil Harrison, National Grid
Philip Joslin, Nexthink

Team 4 Facilitator: Eamon Rendall

Calum McCarroll, NESO
Jon Harle, Dell
Marcus Schoen, Atos
Oliver Parson, National Grid
Ray Knight, Atos
Steve Haskew, Circular Computing

Team 5 Facilitator: Darren Bowling

Eleanor Horn, NESO
Louisa Taylor, Dell
Monish Mohanlal, Atos
Piotr Gasiewski, Atos
Tony Madge, Nexthink

Welcome!

A two-day innovation workshop

Day 1: StratHack

- Scene setting
- Insight
- Ideation

Day 2: SolutionHack

- User feedback
- Solution Design
- Pitch

01

Strathack

The Big Question…

How can we get users of all laptops in the UK to use their laptop batteries as a means to reduce demand on the grid during periods of high demand (and carbon intensive production); and to respond dynamically to demand flexibility requests from NESO?

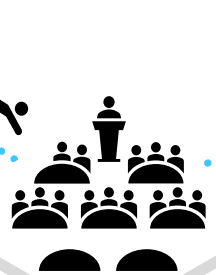
StratHack agenda

Today's journey

1 Arrive ready to go!

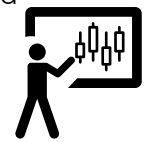
2 Group

Form groups of ~6. Sponsors outline the goals.



3 Level up

Levelling up of the problem statement to ensure a shared understanding.



4 'Lucky Dip'

Icebreaker Session for inspiration!

5 Investigate

Investigate "how might we" statements to define areas for exploration.

6 Develop

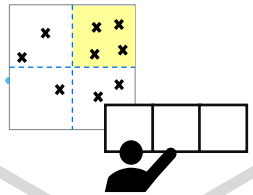
- Develop 8 ideas to address the "how might we" statement.
- Develop one detailed solution

7 Engage

Engage to present ideas and ask questions

8 Align

Vote on ideas based on their effectiveness and feasibility.



9 Story-Telling

Votes are counted, followed by a playback from our rich picture artist.

10 Wrap up

Final words from our sponsors

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DAY 1: Hackathon Agenda (0900 – 16:30)

Concept creation

TIMING	ACTIVITY	RESPONSIBLE
09:00 – 09:30	Welcome coffee	----------
09:30 – 10:30	Agenda / problem statement / research-based insights / Microsoft and Dell services plus current roadmap	Ash Hardman/ David Welling/ MS/ Dell/NESO
10:30 – 10:45	**BREAK**	**----------**
10:45 – 11:15	Lucky Dip (icebreaker with purpose)	Andy Wallace
11:15 – 12:15	Investigate	Facilitators
12:15 – 13:00	**LUNCH**	----------
13:00 – 14:00	Develop	Facilitators
14:00 – 15:00	Engage	Facilitators
15:00 - 15:15	**BREAK**	----------
15:15 – 15:45	Align	Facilitators
15:45 – 16:00	Storytelling	David Gifford
16:00 – 16:30	Panel feedback / plan for Day 2 / close	David Welling/ Ash Hardman

02

Introduction and scene setting

David Welling – National Grid

Potential storage capacity of laptops

UK population - 67,026,292

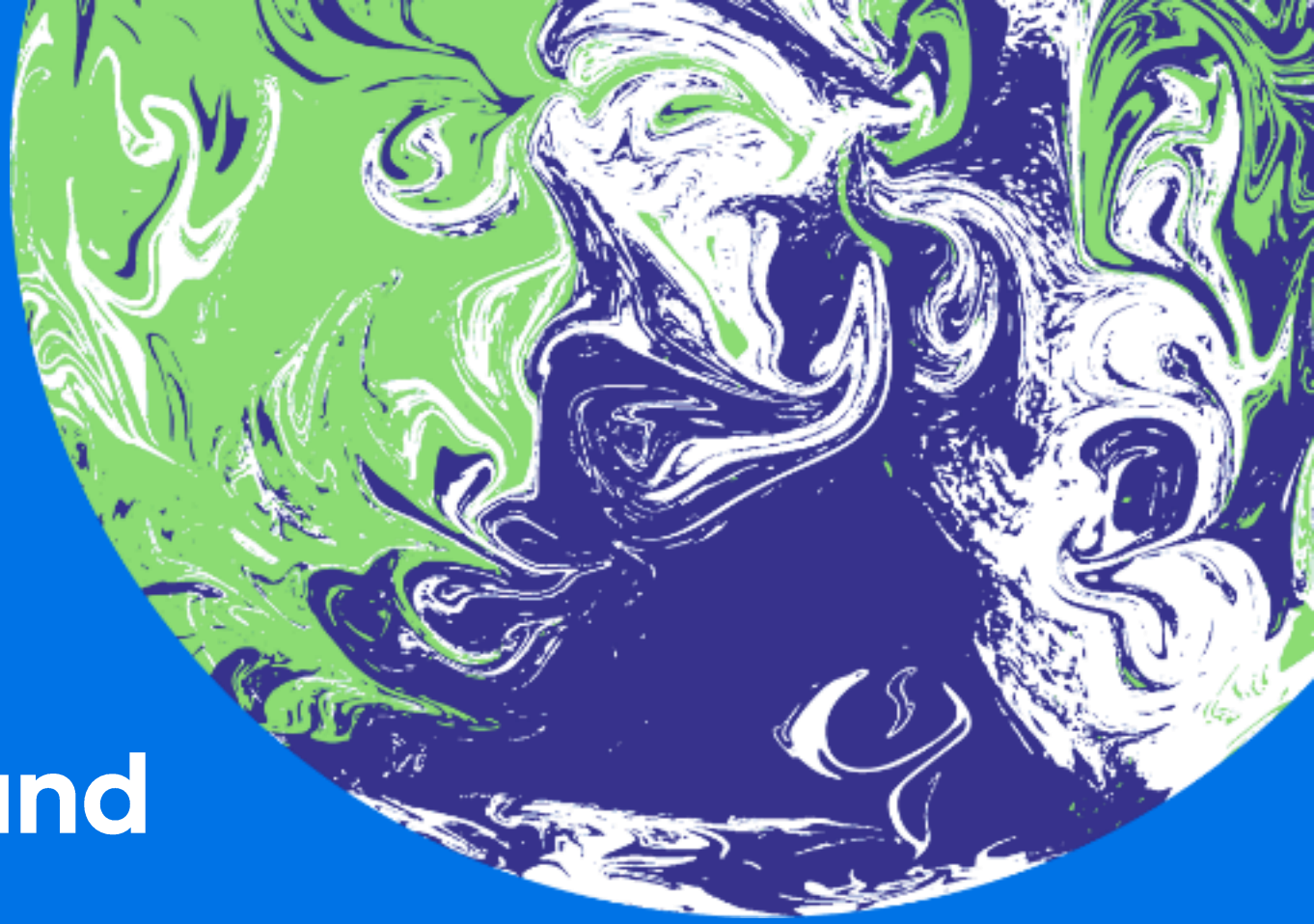
- 76% total pop, 50,939,981 x 0.05 kWh
  - 2,546,999 kWh - 2547 mWh
- 57% total pop, 38,204,986 x 0.05 kWh
  - 1,910,249 kWh - 1910.25 mWh

UK Payrolled employees – 33,090,000 (April – June 2024)

- 68% UK workforce, 22,501,200 x 0.05 kWh
  - 1,125,060 kWh - 1125.06 mWh

Oneida Energy Storage Project (OES Project):

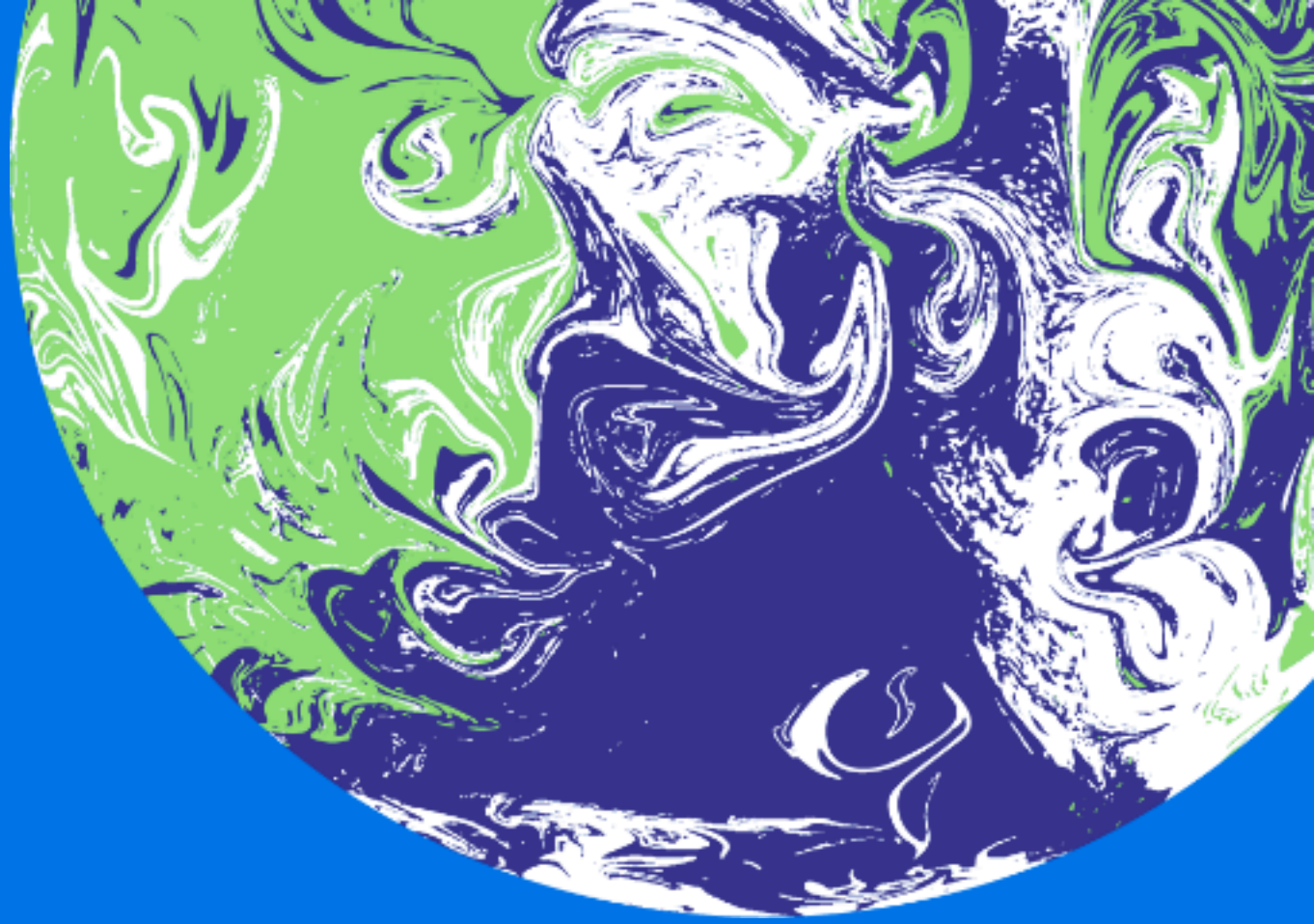
- The Oneida Energy Storage Project (OES Project) is a 250MW/1,000 MWh stand-alone lithium-ion battery storage project in southern Ontario and representing one of the largest clean energy storage projects in the world.



Laptop energy demand flexibility initiative

Using laptop batteries to reduce peak demand on the UK Grid

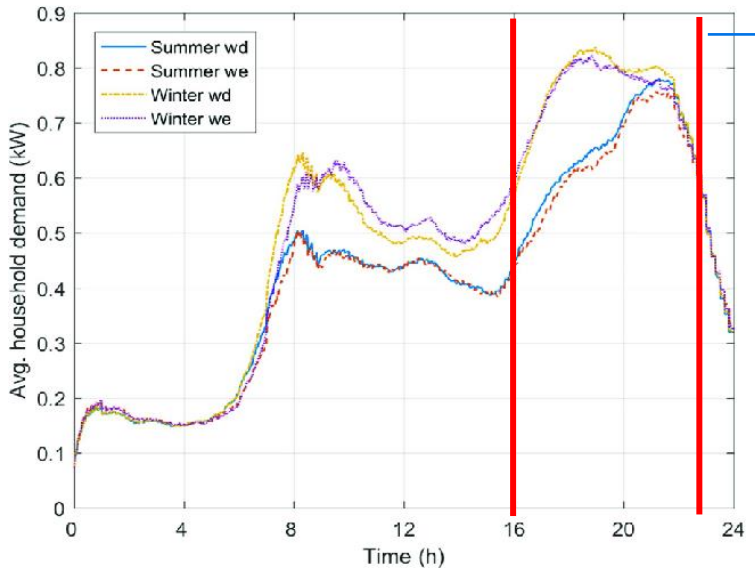
1



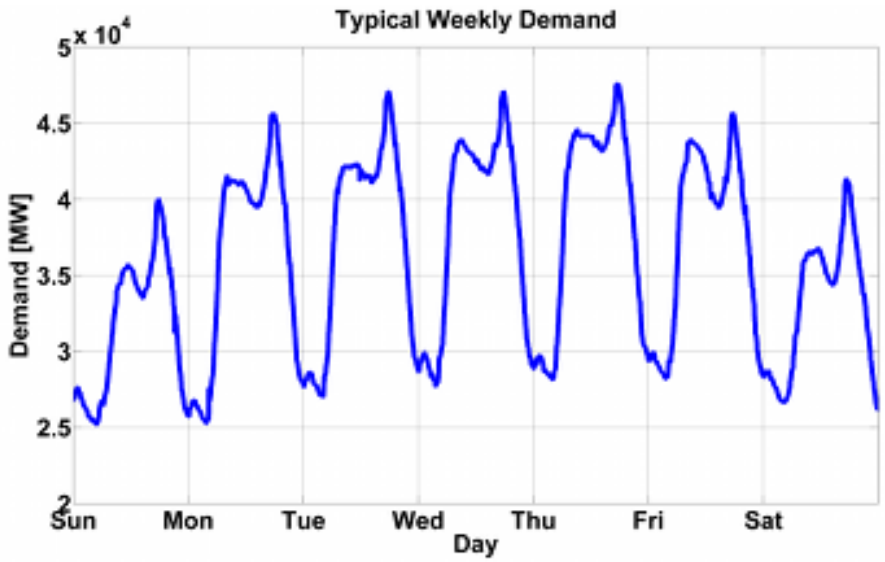
Part 1 –

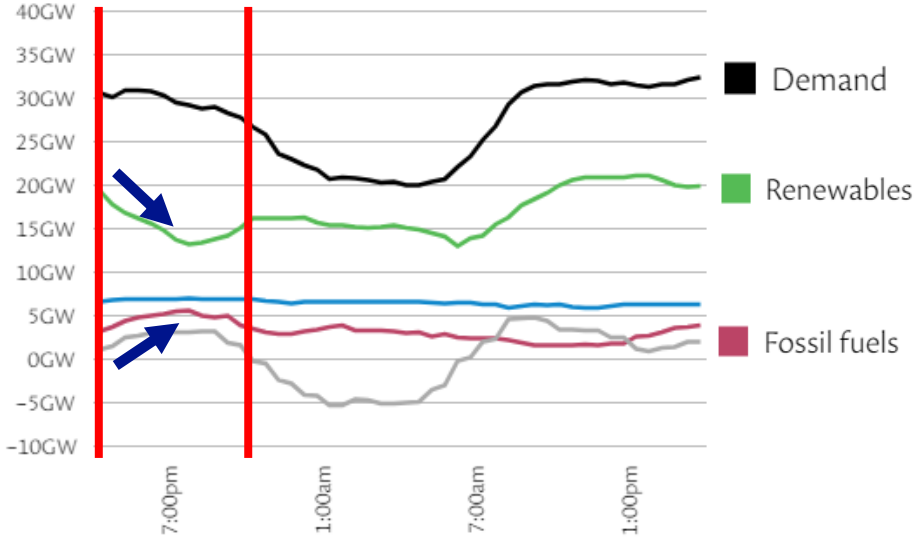
- UK Grid demand
- Grid Carbon Intensity

UK Electricity demand



Peak demand = 16:00-23:00





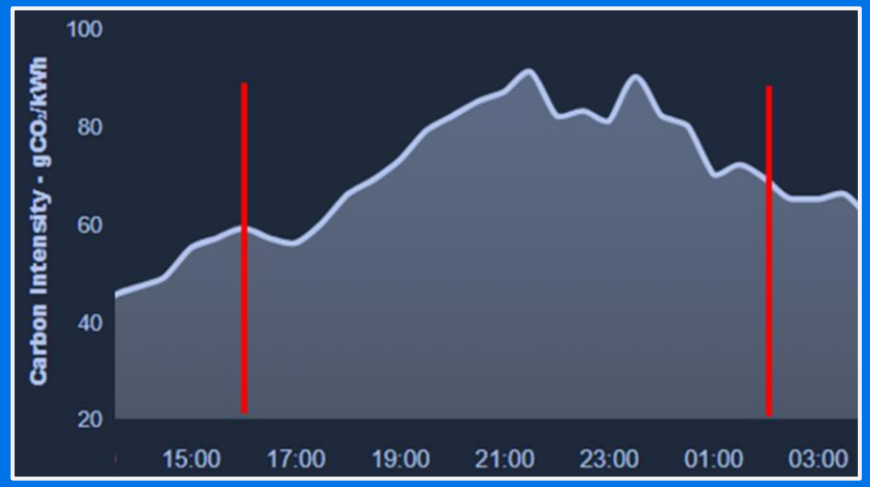
Carbon Intensity Explained

Carbon intensity is a measure of how clean our electricity is. It refers to how many grams of carbon dioxide (CO_2) are released to produce a kilowatt hour (kWh) of electricity.

Electricity that's generated using fossil fuels is more Carbon intensive, as the process by which it's generated creates CO_2 emissions.

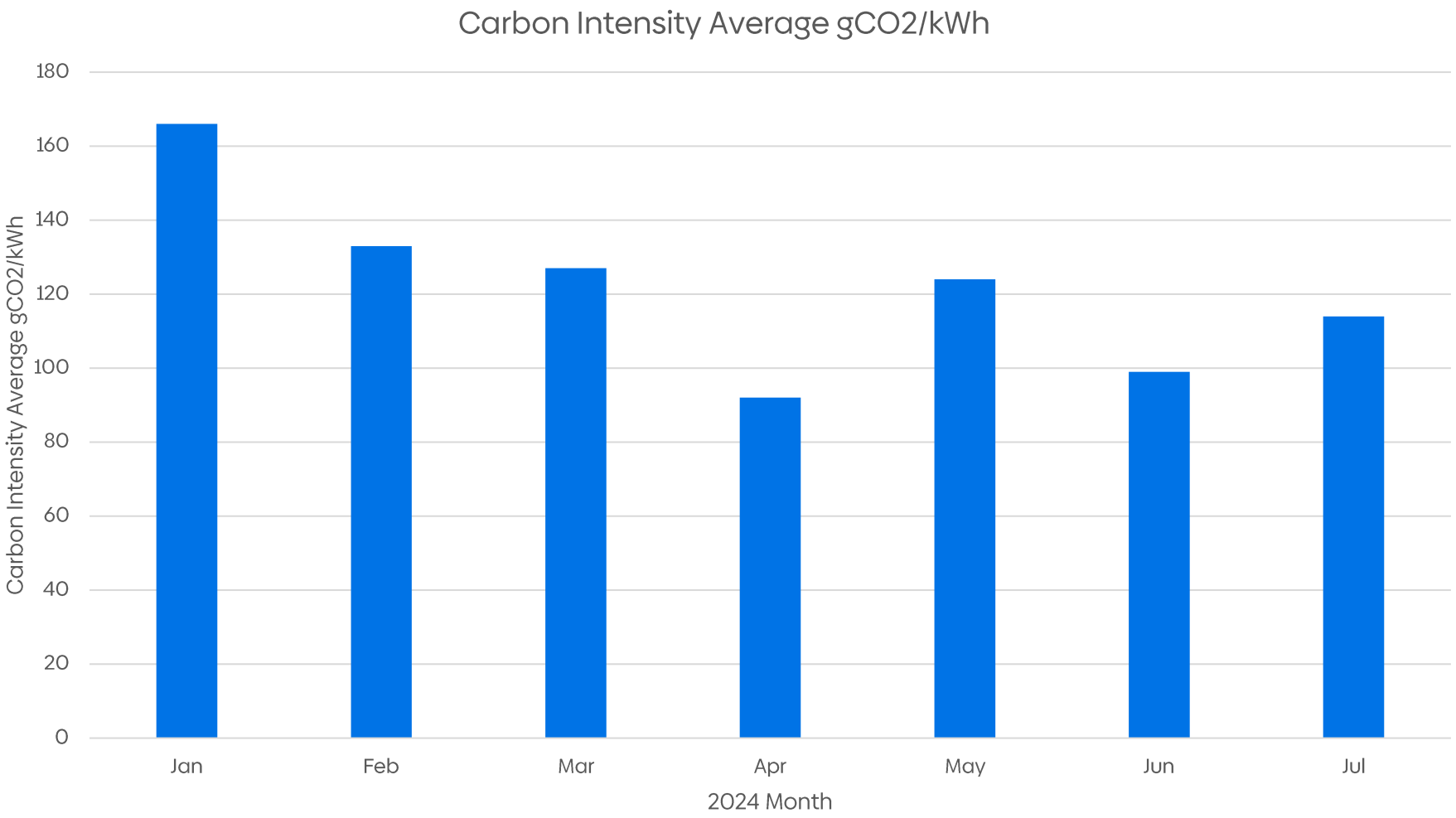
Renewable energy sources, such as wind, hydro or solar power, produce next to no CO_2 emissions, so their carbon intensity value is much lower and often zero.

Using electricity with a low carbon intensity value will reduce carbon emissions overall -especially if we use it during times when the largest amounts of clean electricity are being generated.



nationalgrid

Carbon Intensity 2023 Average = 217 gCO2e/kWh



Public

Energy System Overview

4th December

Calum McCarroll – Power Responsive Technical Delivery Lead
Eleanor Horn - Senior Strategy Analyst

NESO
National Energy System Operator

Atos

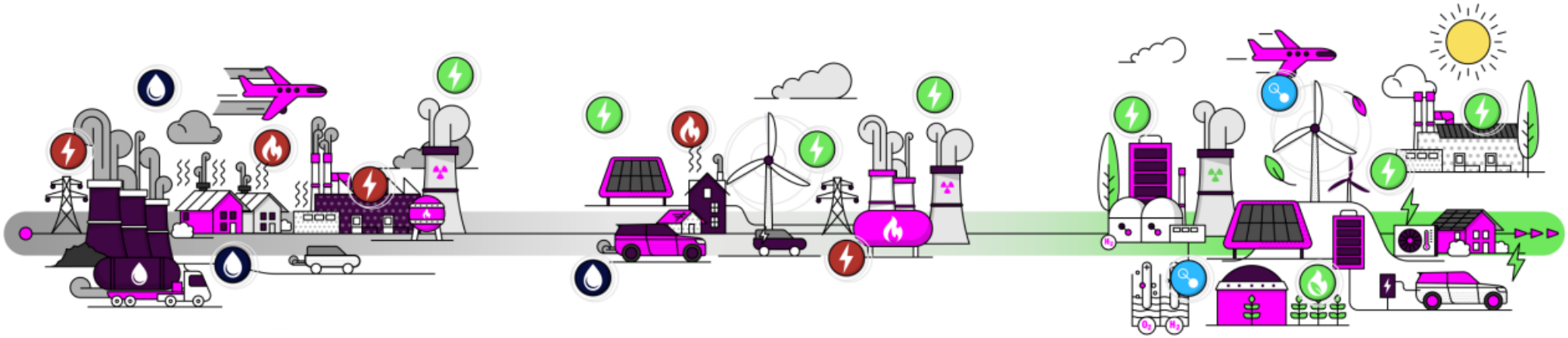
Energy Industry Overview

Using the infrastructure owned by the transmission companies, high voltage electricity is passed onto one of the six Distribution Network Operators (DNOs) across the country.

Think of it like our road and motorway network. The transmission network is the larger scale, high speed route (the motorways) while the DNOs distribute electricity along the 'B roads' to local areas.

The DNOs own the local networks and convert it into a more manageable voltage that's suited for domestic use. Your local distribution network operator then feeds low voltage electricity through to your home or business property.

Suppliers buy electricity from generators and then sell it on to customers, competing to supply homes and businesses who are free to choose any supplier they like.



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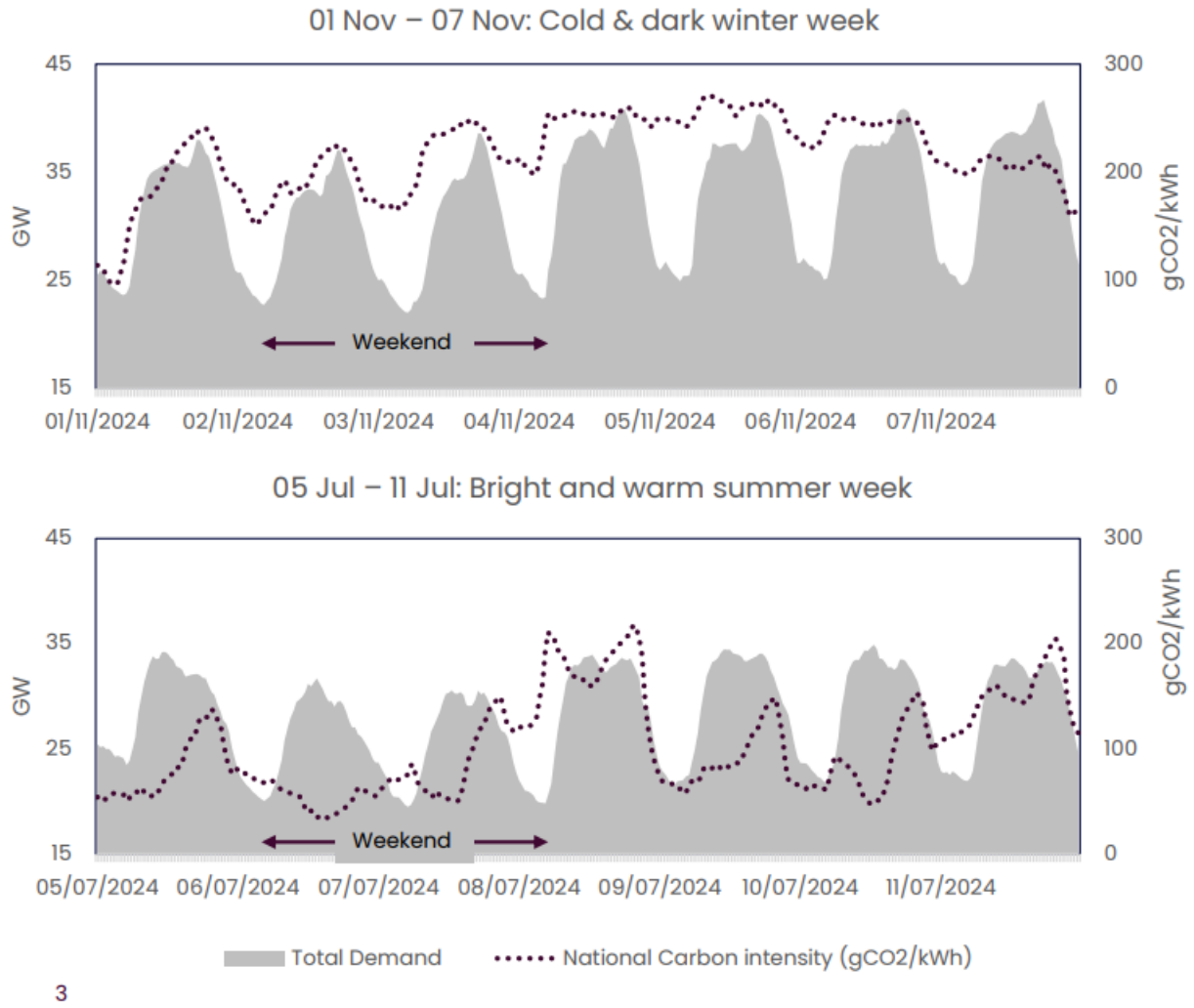
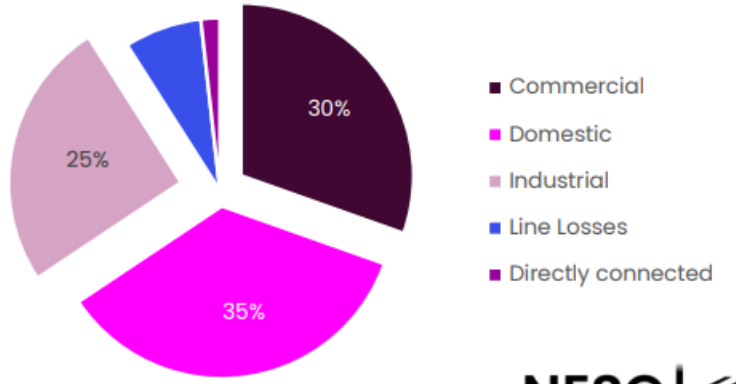
Balancing the power system: Demand



- Electricity demand follows a predictable shape depending on ambient temperatures, light and day of week.
- NESO is responsible for real time energy balancing ensuring that generation is dispatched to perfectly match demand.



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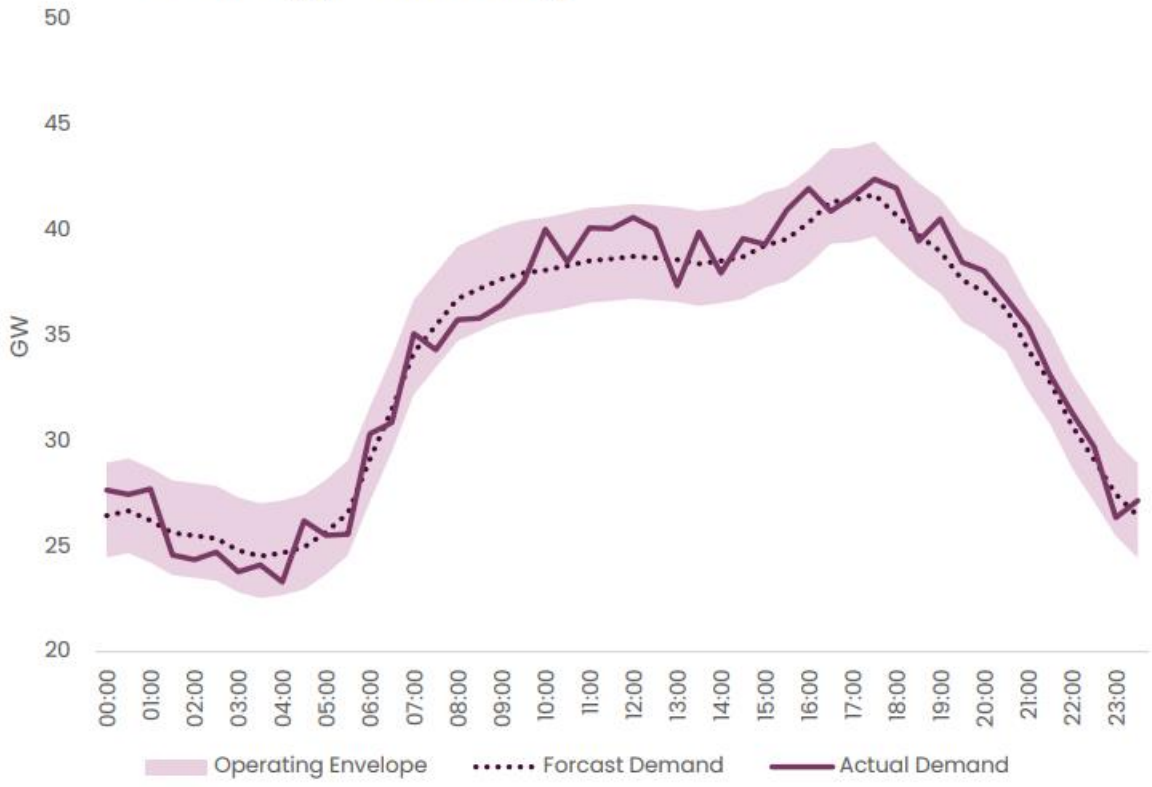
Balancing the power system: Operations

1. Energy balancing



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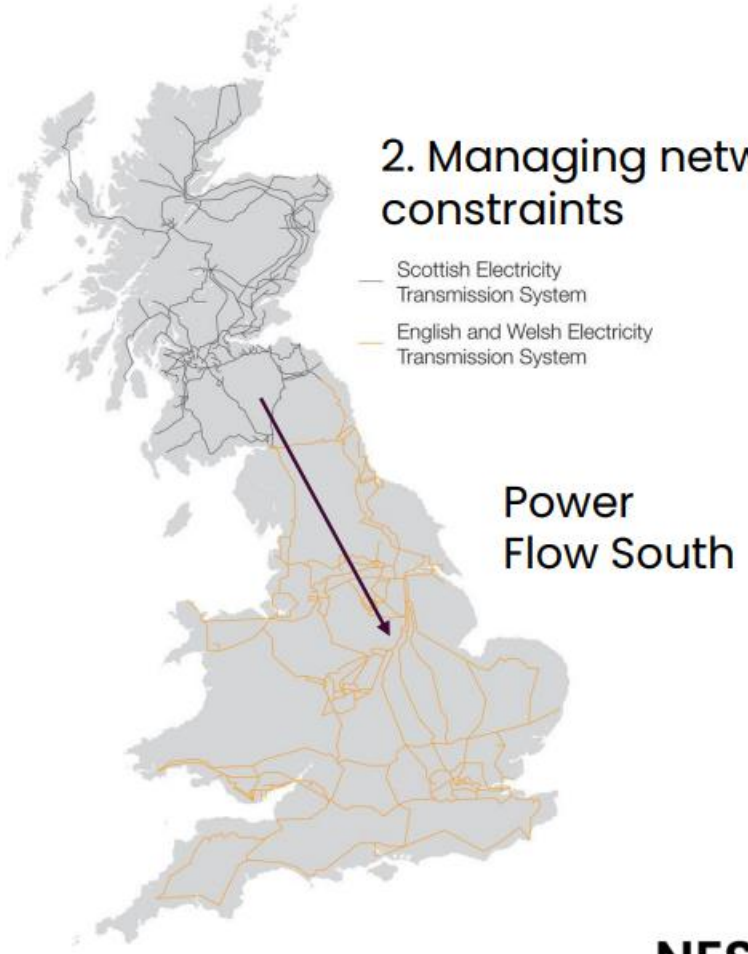
2. Managing network constraints



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Demand Side Response (DSR)

DSR is where electricity consumers either increase or decrease their demand in response to a signal.

A DSR signal could be:

- Responding to a Time of Use tariff
- Responding to a direct instruction from NESO or a Distribution Network System Operator (e.g. to help balance supply and demand or address a network constraint)
- Avoiding high network charge periods (e.g. TRIADS)
- Responding to carbon intensity

These signals are sometimes repackaged by suppliers or aggregators and sent to consumers in a more user-friendly way.

NESO Demand Flexibility Service Signal =

- **Octopus** 'Saving Sessions'
- **Eon** 'Power Switch'
- **EDF** 'Beat the Peak'
- **Good Energy** 'Power Pause'
- **Utilita** 'Power Payback'

NESO National Energy System Operator

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Role of DSR in the transition to net zero

A network heavily reliant on renewables requires demand side flexibility amongst other technologies such as storage to manage the fluctuations in generation.

Example 1 (demand reduction):
Reducing demand can be used as a direct alternative to increasing generation which may have otherwise been a carbon emitting power station.

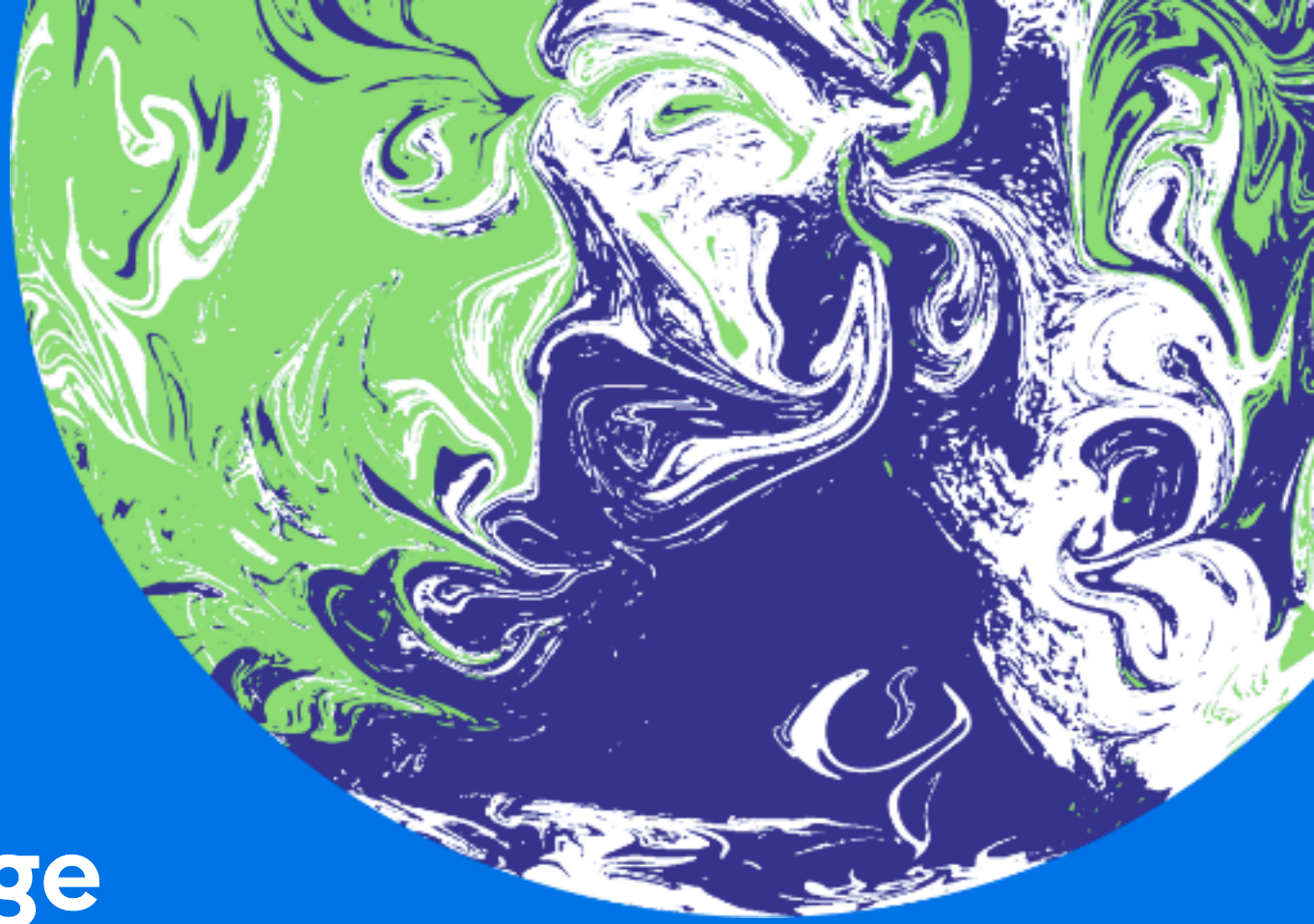
Example 2 (demand increase):
There may be more renewable energy on the system than needed. If consumers turn up their consumption to match the supply, they can maximise the use of renewable energy and reduce the need to turn the renewable generation down.

6

2

Part 2 –

- Laptop energy storage
- Potential volumes of laptops
- Demand reduction potential



National Grid laptops – Battery storage capacity

Dell Latitude 5420

- 3 cell: 42 Wh
- 4 cell: 63 Wh

Dell Latitude 5430

- 3 cell: 41 Wh
- 4 cell: 58 Wh

Dell Latitude 5440

- 3 cell: 42 Wh
- 4 cell: 54 Wh

Average battery storage capacity:

- 50 Wh
- 0.05 kWh

Enable the energy transition for all

Deliver for our customers efficiently

Grow our organisational capability

Empower our people for great performance

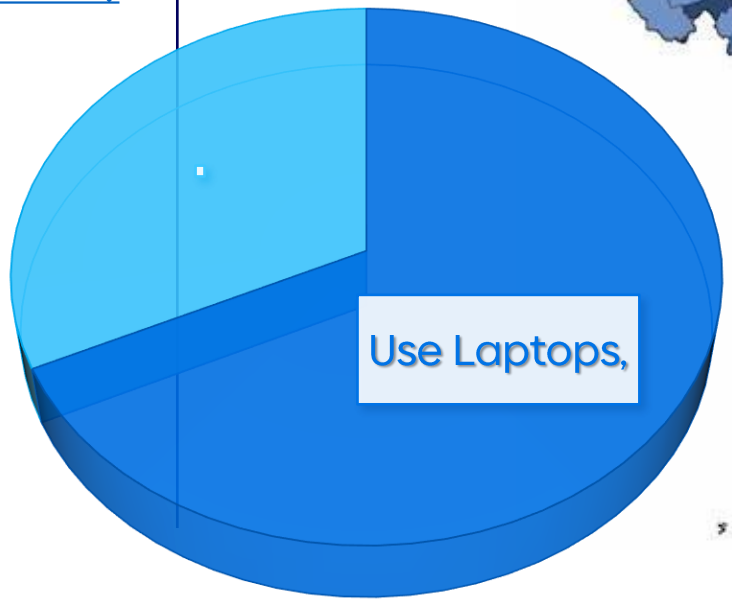
UK Population and Laptop volume Data

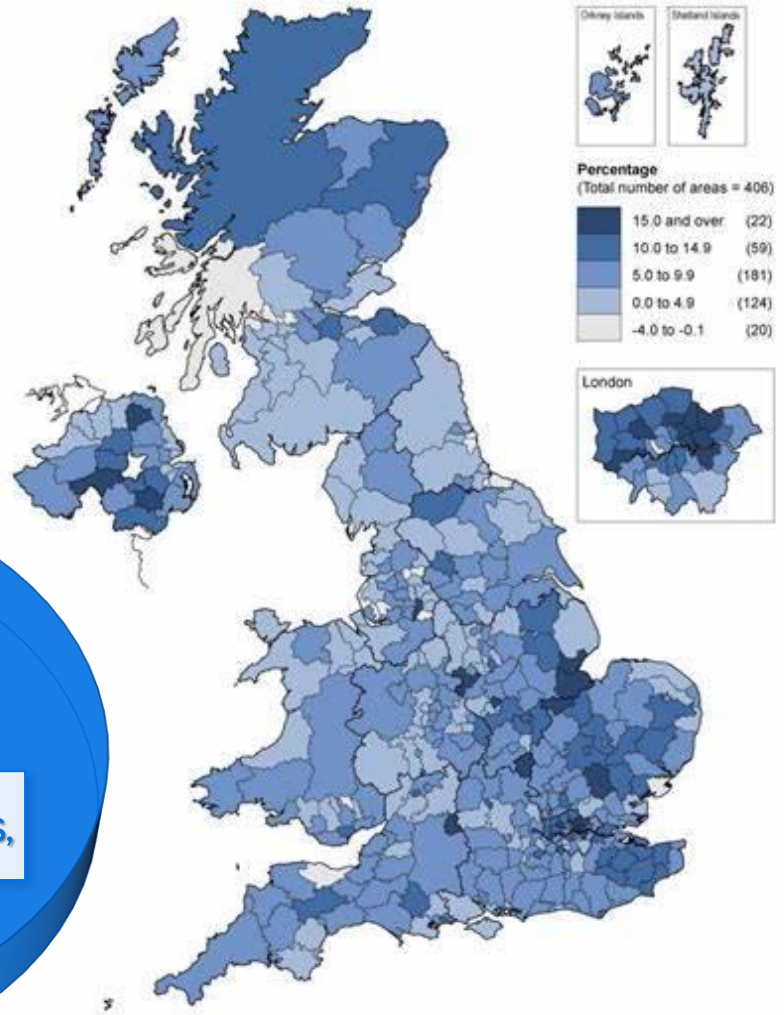
UK population - 67,026,292

- Laptop penetration UK population 2021 - 76%
  - **50,939,981 Laptops**
- Laptop penetration UK population 2020 – 57%
  - **38,204,986 Laptops**

UK Payrolled employees – 33,090,000 (April – June 2024)

- Laptop penetration UK workforce – 68%
  - **22,501,200 Laptops**





Laptop Energy data

Key Wattage:

- Range – 30-200W
- Most common 65W

NG Dell 5530 running Win 11

- 22-30 W draw while using teams (when fully charged)
- 45-50 W draw while charging
- 22 Wh per hour based on NG average actual energy consumption calculation
- 44.436 kWh/year
- 0.1736 kWh/day - 173.6 Wh/day (active use)
- 21.7 Wh/hour (173.6 / 8 hours of active working day use)

National Grid laptops – TEC rating:

- Dell Latitude 5420 – 18.5 kWh
- Dell Latitude 5430 – 23.36 kWh
- Dell Latitude 5440 – 19 kWh
- Average TEC – 20.29 kWh y figures:

Key Figures

22-30 W

draw while using Microsoft teams

45-50 W

draw while charging 22 Wh per hour

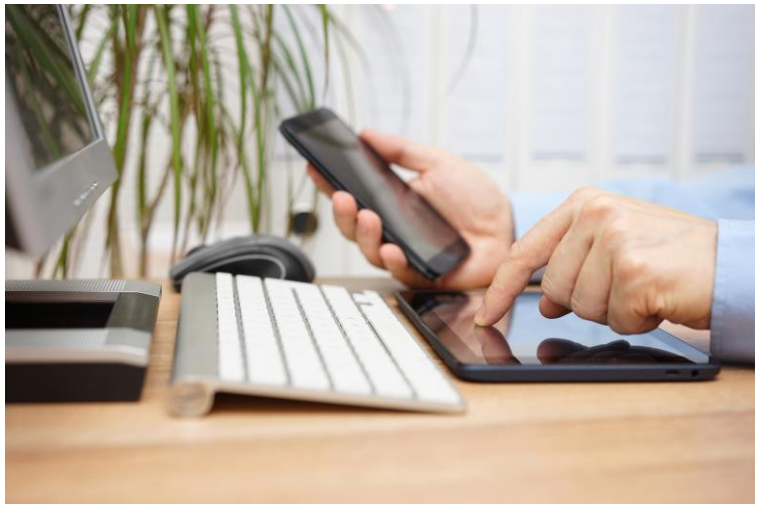
Laptop Energy data

UK population
67,026,292

- 76% total pop, 50,939,981 x 0.05 kWh
- 22-30 W = 1120.68 MW – 1528.20 MW (laptops x W / 1,000,000)
- 45-50 W = 2292.3 MW – 2547 MW
- 22 Wh/hour = 1120.68 MWh

57% total pop,
38,204,986 x 0.05 kWh

- 22-30 W = 840.51 MW – 1146.15 MW
- 45-50 W = 1719.22 MW – 1910.25 MW
- 22 Wh/hour = 840.51 MWh



UK Payrolled employees
33,090,000 (April – June 2024)

- 68% UK workforce, 22,501,200 x 0.05 kWh
- 22-30 W = 495.03 MW – 675.04 MW
- 45-50 W = 1012.55 MW – 1125.06 MW
- 22 Wh/hour = 495.03 MWh/hour

3

Part 3 – So What?

- UK household usage comparison
- Energy generation comparison

Energy comparisons #1

UK household energy usage:

OVO energy

- Medium 2,800 kWh/year - High 4,153 kWh/year
- 7.67 kWh/day - 11.34 kWh/day (figures above/365)
- 7.5 kWh/day (225 kWh divided by 30 days) for a medium use household. (ovo energy calculation.....?)

Ofgem

- Medium 2,700 kWh/year - High 4,100 kWh/year
- 7.40 kWh/day - 11.23 kWh/day (figures above/365

Our assumption for calculations

Average home sits more toward the medium home figures than the high

- 7.5 kWh/day - 10 kWh/day
- 8.5 kWh/day for an "average" home
- 0.354 kWh/hour for an "average" home (8.5 kWh / 24hours)

Some other examples from around your home:

- fridge-freezer: expect to use 1 kWh in 26 hours
- electric oven: expect to use 2 kWh for 30 minutes of use
- tumble dryer: expect to use 4.5 kWh in a single cycle

If we removed the energy demands on the grid of 68% UK workforce = 22,501,200 laptops...

- 22-30 W = 495.03 MW – 675.04 MW
- 45-50 W = 1012.55 MW – 1125.06 MW
- 22 Wh/hour = 495.03 MWh

Every hour would be the same as:

- 58,238.82 average homes for a day
- 1,398,389.83 average homes for an hour

Removing all these cities from the grid for an hour:

- Bristol 205,270 households
- Manchester 214,700 households
- Leeds 320,600 households
- Birmingham 423,500 households
- Sheffield 232,000 households

Energy comparisons #2

- Energy production

Operator	Name	Fuel	Type	Capacity (MW)	Region
Darx Power	Draz – coal units	Coal	Conventional steam	1320.0	Yorkshire and Humber
EPUKi	Kilroot	Coal	Conventional steam	559.0	Northern Ireland
Drax Power	Drax GT	Diesel/gas Diesel/Gas oil	OCGT	75.0	Yorkshire and Humber
EDF Energy	West Burton GT	Diesel/gas Diesel/Gas oil	OCGT	40.0	East Midlands
Calon Energy	Baglan Bay	Natural Gas	CCGT	520.0	Wales
ESB	Corby	Natural Gas	CCGT	407.0	East Midlands
Bottom 11 Natural Gas generators Centrica, Drax Power, E.On UK, SSE, EDF Energy	Glanford Brigg, Blackburn, Castleford, Sandbach, Thornhill, Burghfield, Chickerell, Chippenham, Pilkington – Greengate, London Heat & Power, Barkentine Heat & Power	Natural Gas	OCGT	99.0, 60.0, 56.0, 56.0, 50.0, 50.0, 50.0, 10.1, 10.0, 9.0, 1.0 = 451.1	Yorkshire and Humber, North West, South East, South West, London

- If we removed the energy demands on the grid of 68% UK workforce = 22,501,200 laptops…
- 22-30 W = 495.03 MW – 675.04 MW
- 45-50 W = 1012.55 MW – 1125.06 MW
- 22 Wh/hour = 495.03 MWh
- It would be the same as the 11 smallest Natural gas generators in the UK
- Or one of the larger OCGT generators

GWP reduction potential

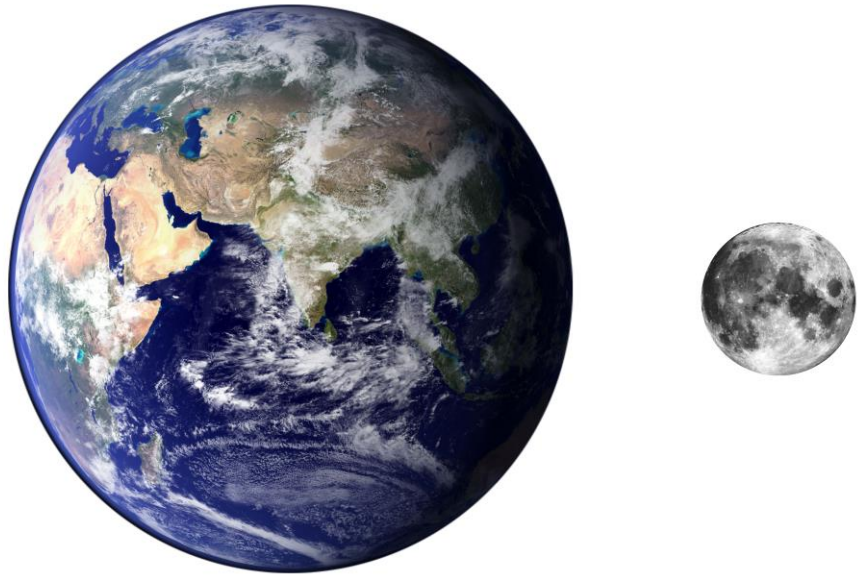
Potential GWP reduction using device battery demand flexibility

- UK CI 2023 average – 217 gCO2e/kWh
- 76% total pop = 50,939,981 laptops
- 22 Wh/hour = 1120.68 MWh per hour
- 243,187.56 kgCO2e per hour
- 243.19 MTCO2e per hour - 621,975 miles driven by an average gasoline-powered passenger vehicle

- 57% total pop = 38,204,986 laptops
- 22 Wh/hour = 840.51 MWh per hour
- 182,390.67 kgCO2e per hour
- 182.4 MTCO2e per hour - 466,500 miles driven by an average gasoline-powered passenger vehicle

- 68% UK workforce = 22,501,200 laptops
- 22 Wh/hour = 495.03 MWh per hour
- 107,421.51 kgCO2e per hour
- 107.42 MTCO2e per hour - 274,734 miles driven by an average gasoline-powered passenger vehicle

- The moon is 251,000 miles from earth.....



UK - Laptop energy demand flexibility initiative

Context:

- UK electricity Peak demand – 16:00 – 23:00
- Carbon Intensity of electricity generation highest during peak period
- Utilities incentivising consumers to reduce usage during peak load (EV charging tariffs 02:00-06:00)
- Utilities creating “virtual power plants” using distributed energy micro generation and storage (home solar, wind, battery

Opportunity:

- Laptop batteries could be used to create a virtual power plant to reduce demand during peak periods of periods of high carbon intensity.
- 22,501,200 Laptops in UK workforce

Potential storage - 1,125,060 kWh - 1125.06 mWh

Potential energy use - 495.03 MWh/hour

- If we removed the energy demands on the grid of 68% UK workforce = 22,501,200 laptops…

- Every hour would be the same as:
- 58,238.82 average homes for a day
- 1,398,389.83 average homes for an hour
- Removing all these cities households from the grid for an hour:
  - Bristol 205,270 households
  - Manchester 214,700 households
  - Leeds 320,600 households
  - Birmingham 423,500 households
  - Sheffield 232,000 households

- It would be the same as the 11 smallest Natural gas generators in the UK

Inhibitors/ barriers

03

Break

Please return at 10:45

04

Lucky Dip (icebreaker with purpose)

StratHack session

Lucky Dip

An Icebreaker with Purpose

Action:
Lucky Dip - place your sweets on subjects related to the future of software development

Objective:
Icebreaker for teams ahead of planned table work

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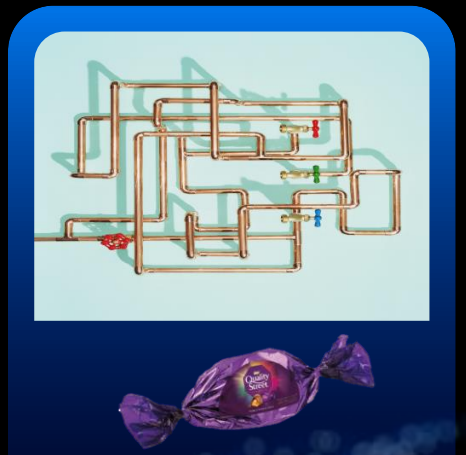
Four radical ideas

… But which of them are old hat?… Or maybe they are pure science fiction?

xx

xx



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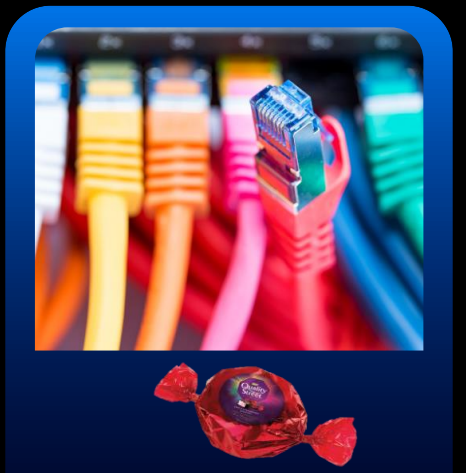
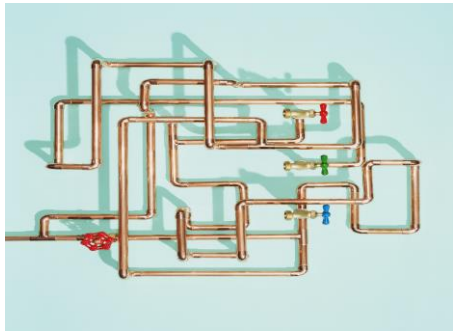


4 Radical Ideas …

… But which of them are old hat?
… Or maybe they are pure science fiction?



Hydrogen Powered digital technology…

Use of AI to manage green power supply for hydrogen manufacture by electrolysis in a Shipping Container Unit

- AI can optimise ‘green’ hydrogen production and storage.
- Use of H2 to store energy helps to balances supply and demand.
- Enhances system stability by storing surplus energy.
- Reduces costs and emissions through optimization.
- Could larger offices use the same technology?

Image from National Grid (Deeside Substation)

Smart Office Heating and Ventilation

Use of MS CoPilot to control Heat Pump operation in a Head Office building to minimise heating costs

- *Heat pumps are a key component in the design of modern,, energy efficient buildings*
- *However, Building Management Systems are rarely integrated with corporate IT systems*
- *Kapacity.io have commercialized a PhD Thesis in computational fluid dynamics*
- *AI optimization of heat pump for office building heating and ventilation*
- *Microsoft and Vattenfall pilot program in Stockholm H.O.*
- *Could MS CoPilot to tell the BMS who will be in the building and when?*

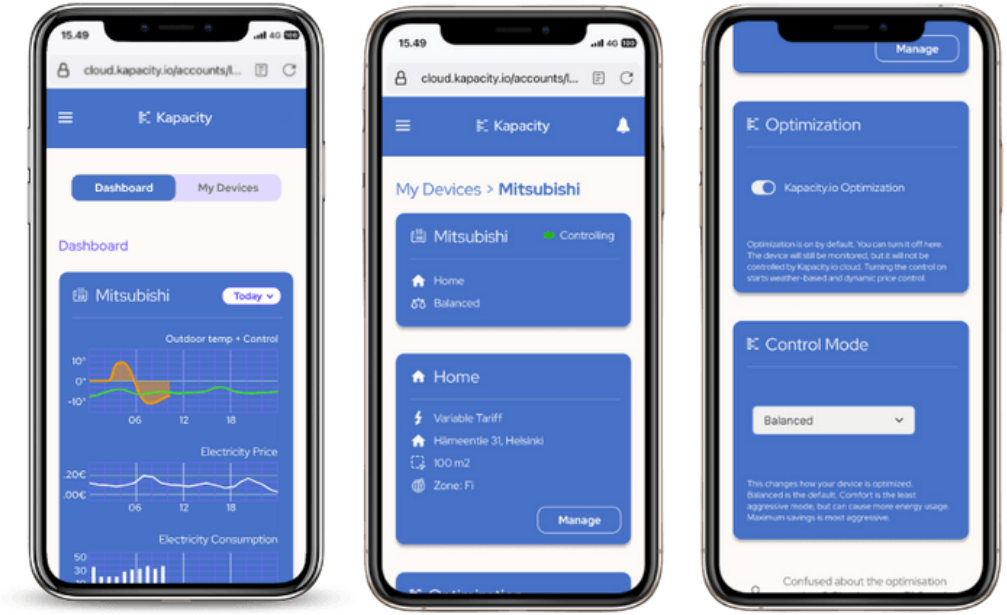


Image from Kapacity.io

Smart Cooling for Data Centres

AI Enabled thermal cameras in data centres to monitor and manage cooling systems and reduce power consumption

- *Cooling systems account for between 40% and 70% of the total power consumption in Data Centres*
- *Poor ventilation, uneven workloads and building layouts create hotspots and coldspots*
- *Ekkosense use sensors and 3d models to model thermodynamics and identify hotspots or unnecessary cooling*
- *AI modelling and machine learning can reduce power consumption by 15 to 20%*
- *Additional benefits include reduced outages and greater longevity*

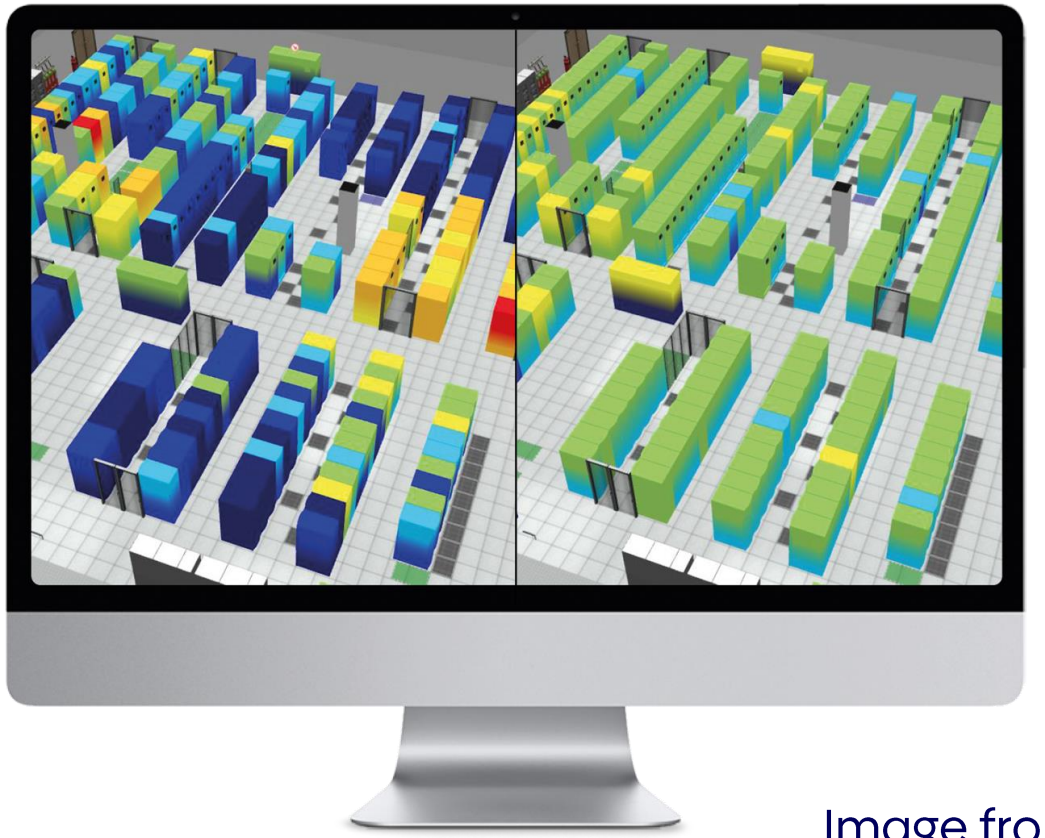


Image from Ekkosense

Human Powered charging

Issuing staff with eBikes and adaptors so that the power generated on the morning commute can charge their laptop battery on arrival at work

Best Case – Pretty lights and warm fuzzy feeling
(Image from Coldplay's Music of the Spheres World Tour People-Power Energy Zone)

Worst Case – 4 hour commutes, frustration and nasty accidents
(Image from Daily Mail)

Thank you

Enjoy the workshop!

LUCKY DIP

Physical World

Could we?

There would be too many real-world barriers	This is important for addressing current real-world challenges	This would bring positive digital disruption	This is taking digital too far	

Digital World

Should we?

05

Investigate

StratHack session

Investigate

Action:
Investigate “How might we” solve this problem per table

Objective:
Develop "How Might We” questions which address a subset of the problem statement

The Big Question...

Key insight:

How might we...

Key insight:

How might we...

Key insight:

How might we...

The Big Question...

How can we get users of all laptops in the UK to use their laptop batteries as a means to reduce demand on the grid during periods of high demand (and carbon intensive production); and to respond dynamically to demand flexibility requests from NESO?

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06

Lunch

Please return at 13:00

07

Develop

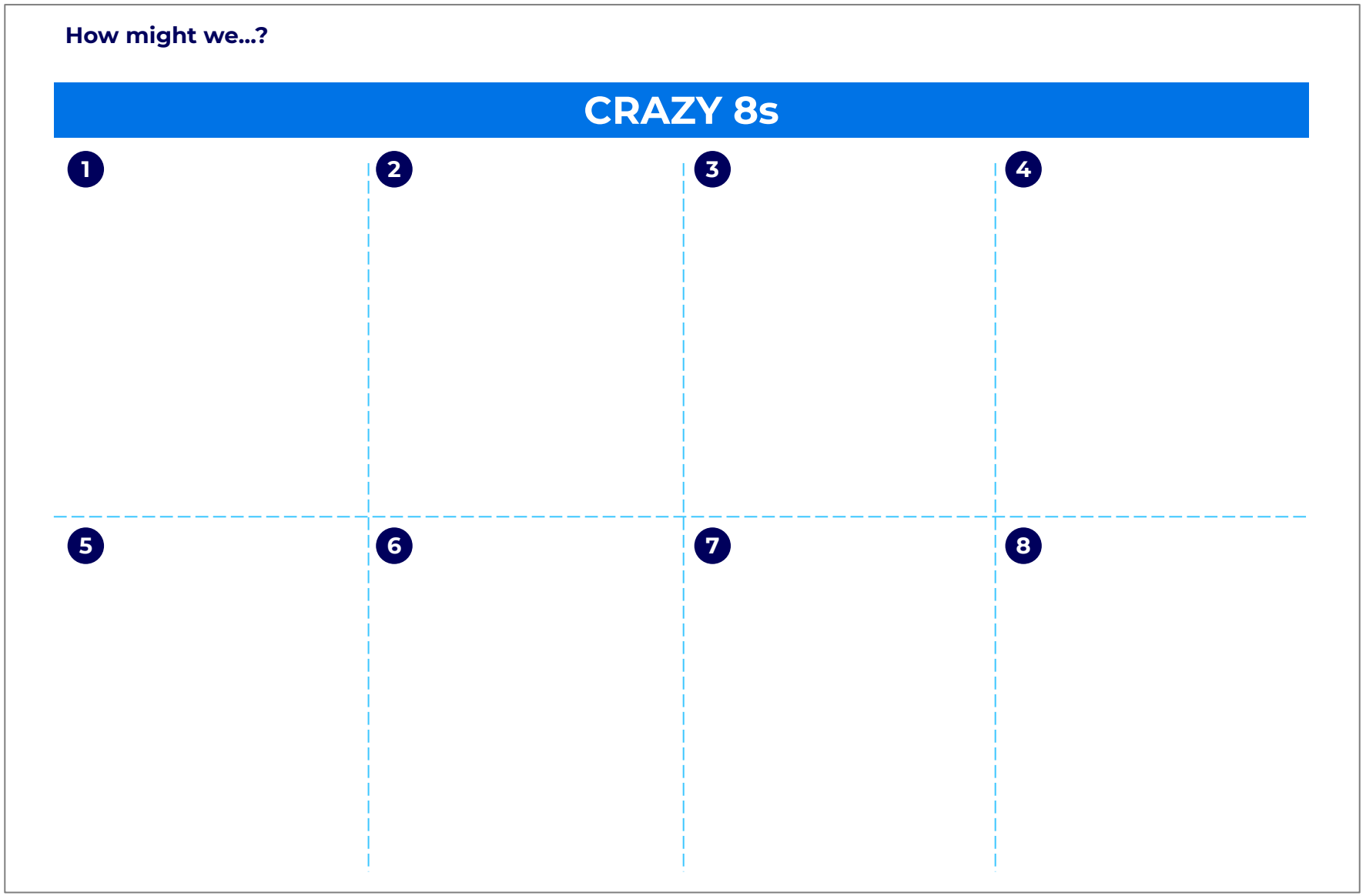
StratHack session

Develop
(Part 1)

Action:
Develop the ideas

Objective:
Come up with 8 ideas to solve the problem. Get past the standard answer and see what else is out there. “Crazy 8!”

How might we...?



The Big Question...

How can we get users of all laptops in the UK to use their laptop batteries as a means to reduce demand on the grid during periods of high demand (and carbon intensive production); and to respond dynamically to demand flexibility requests from NESO?

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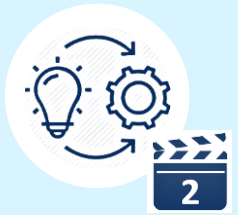
StratHack session

Develop
(Part 2)



Action:
Each table picks 1 idea and further develops it

Objective:
Articulate the ideas in full and get ready to present them to the room

Develop it!

Solution

How might we...?

How it addresses the above:

Draw it!

CATCHY NAME:

Key benefits/impact:

Key features:

Next steps:

Impact

LOW 1 2 3 4 5 HIGH

Feasibility

LOW 1 2 3 4 5 HIGH

Time to Implement

LOW 1 2 3 4 5 HIGH

The Big Question...

How can we get users of all laptops in the UK to use their laptop batteries as a means to reduce demand on the grid during periods of high demand (and carbon intensive production); and to respond dynamically to demand flexibility requests from NESO?

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08

Engage

StratHack session

Engage (present)

Action:
Present on the final idea your group has developed

Objective:
Share the ideas that each team has developed and allow each other to provide feedback and ask questions

09

Break

Please return at 13:15

10

Align

StratHack session

Align (voting)

Action:
Align the room by voting on the best ideas to take forward

Objective:
Vote on each other's ideas to get a sense of the energy in the room and the ideas that spark inspiration

11

Storytelling

StratHack session

Storytelling

Action:
Rich Picture Playback

Objective:
Share outputs from the rich picture artist on today's journey

Storytelling from today

StratHack session

Reflection & Wrap-Up

Action:
Wrap-Up/Next Steps

Objective:
Reflect on today's journey and clarify outputs and expectations on next steps

The Big Question...

How can we get users of all laptops in the UK to use their laptop batteries as a means to reduce demand on the grid during periods of high demand (and carbon intensive production); and to respond dynamically to demand flexibility requests from NESO?

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End of day one!

Thank you

See you tomorrow!

Atos

Welcome to day 2

Concept refinement

5th December 2024

Atos

DAY 2: Hackathon Agenda (08.00 – 15.00)

Concept refinement

TIMING	ACTIVITY	RESPONSIBLE
08:00 – 08:30	Welcome coffee	David Welling/ Ash Hardman
08:30 – 09:30	Concept development and discussion guide	Facilitators
09:30 – 10:30	User interviews (30 mins per team) • Team 1 - room MR3 (09:30-10:00) Team 2 - room MR3 (10:00-10:30) • Team 3 - room MR4 (09:30-10:00) • Team 4 - room MR4 (10:00-10:30) • Team 5 - room MR7 (09:30-10:00)	One interviewer & one note taker from each team
10:30 – 11:00	BREAK	
11:00 – 12:00	User journey mapping/ wireframes	Facilitators
1200 – 12:45	Prepare final presentations	Squad leaders
12:45 - 13:20	LUNCH	
13:20 – 13:30	Move back to innovation room & prepare for the panel	George Miller
13:30 – 14:30	Panel presentations (10 mins per team presentation/ 30 mins panel feedback)	Squad leaders
14:30 – 15:00	Storyboard of the day/ concluding remarks/ next steps/ close	David Gifford/ David Welling/ Ash Hardman

01

Concept development

The solution opportunity we see

Wouldn't it be great if...

- ... (write in)
- ...
- ...
- ...

Customer experience we will offer

Key elements of services experience we intend to provide

Key steps:

1. … (first step - write in)

2. … (second step – write in)

3. … etc

4. …

Your interview questions – for 30 minute User interviews

Consider the questions you want to ask Users

The Big Questions

1. …. e.g. Related to current User behaviour/ their attitudes that shape this

2. …. e.g. Feedback on your big idea – initial reaction/ likes/ dislikes/ adoption challenges & other perceived barriers to change

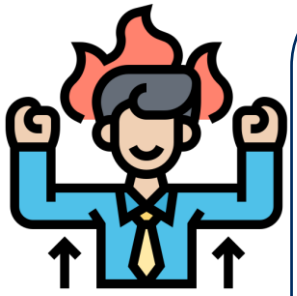
3. …. e.g. Opportunity for further refinements/ improvements

Subsidiary questions

1. ….
   - …
   - …
   - …
2. ….
   - …
   - …
   - …
3. ….
   - …
   - …
   - …

Personas

Describe the essence of your interviewees' outlook regarding this topic



Eco Warriers

- Passionate about doing their bit to help arrest climate change
- Willing to go out of their way to make small changes that add up to a big difference
- Delighted to have another opportunity to contribute through using their laptop battery as a smart grid device

Cynics

- Sees the growing evidence that climate change is occurring
- Thinks the problem is far too big and global for their own behaviour to be significant
- Doesn't want the faff of doing anything themselves about how their own laptop operates

02

User interviews

Insight & Feedback

Insights from your user interviews

Here's what our users think about the topic...

PERSONA PROFILE

OBSERVATION 1

(Write in)

Supporting evidence

(User quote)

OBSERVATION 2

Supporting evidence

OBSERVATION 3

Supporting evidence

The customer problem we are addressing

Describe customer perspective

- … Overall perspective on core idea (write in – using voice of the customer)

  Supporting User quote:

- … Specific needs (practical requirements)/ wants (desires from this service)

  Supporting User quote:

- … Feedback on the concept as presented to them by your team

  Supporting User quote:

- …. Potential barriers… & how we can address these

  Supporting user quote:

User journey mapping & wireframes

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Customer experience we will offer (revised & updated)

Key elements of services experience we intend to provide

Key features:

1. … (first step - write in)

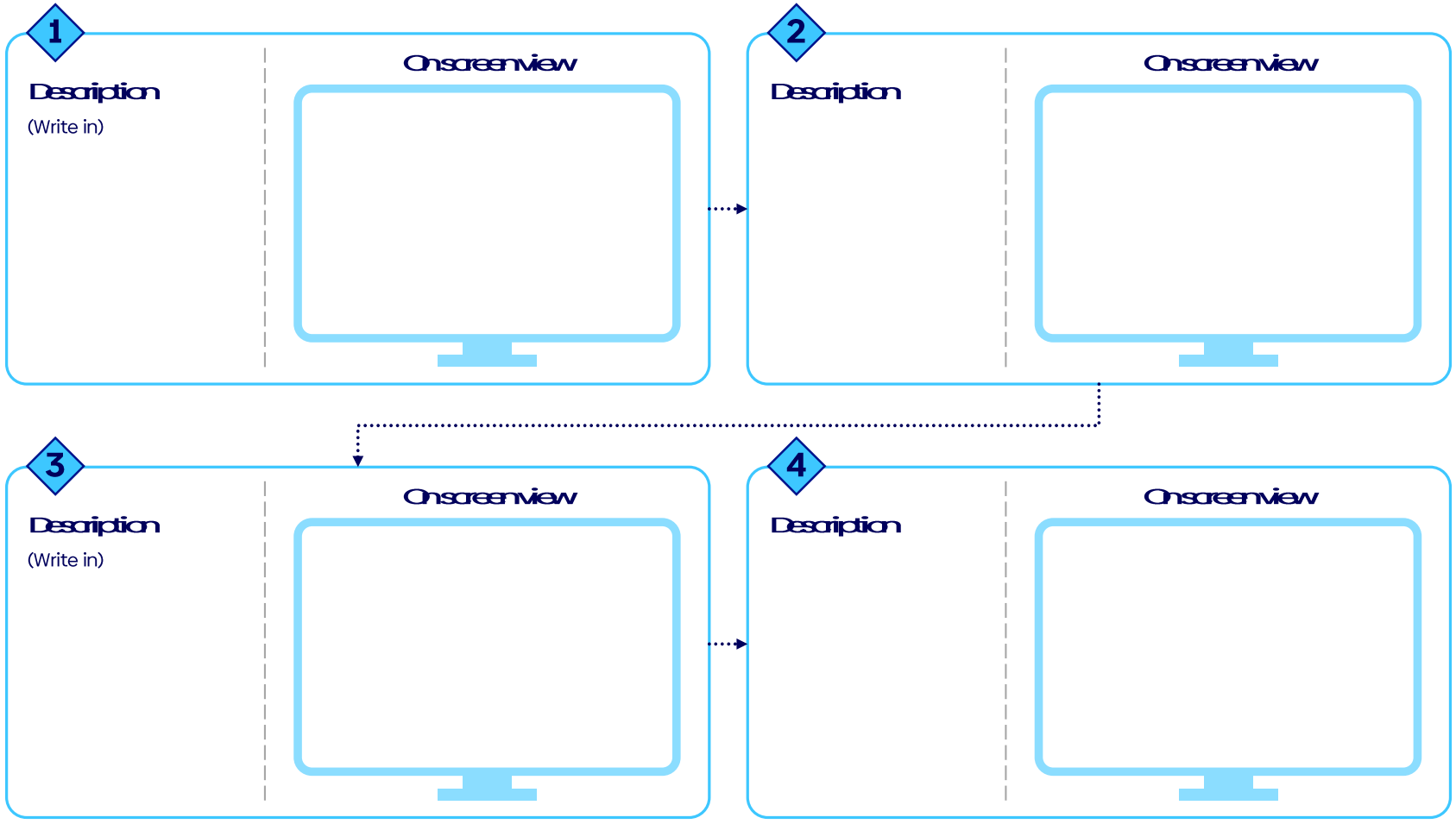
2. … (second step – write in)

3. … etc

4. …

Insights from your user interviews

Describe and show key steps in the user experience



Pitch preparation

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Your pitch

5 minute pitch

5 minute panel feedback/ Q&A

2 slides

Preparing your pitch

Four steps to consider

Pitch outline

PROBLEM				
SOLUTION	Explain your idea			
BENEFITS, INHIBITORS, & HOW TO ADDRESS THEM (essence of your argument)	User/ Corporation	Partners (e.g. Microsoft/ Dell/ NESO etc)	Society as a whole	
NEXT STEPS (call to action)	Activities: 1. … 2. … 3. …	Resources: • Sponsorship: • People: • Money: • Partner alignment:		

Pitch to the panel

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Sequence

Pitch delivery

5 minute pitch + 5 minute panel feedback/ Q&A

	START TIME	FINISH TIME
Team 1:	13:00	13:10
Team 2:	13:10	13:20
Team 3:	13:20	13:30
Team 4:	13:30	13:40
Team 5:	13:40	13:50
Panel feedback summary	13:50	14:00

Storytelling

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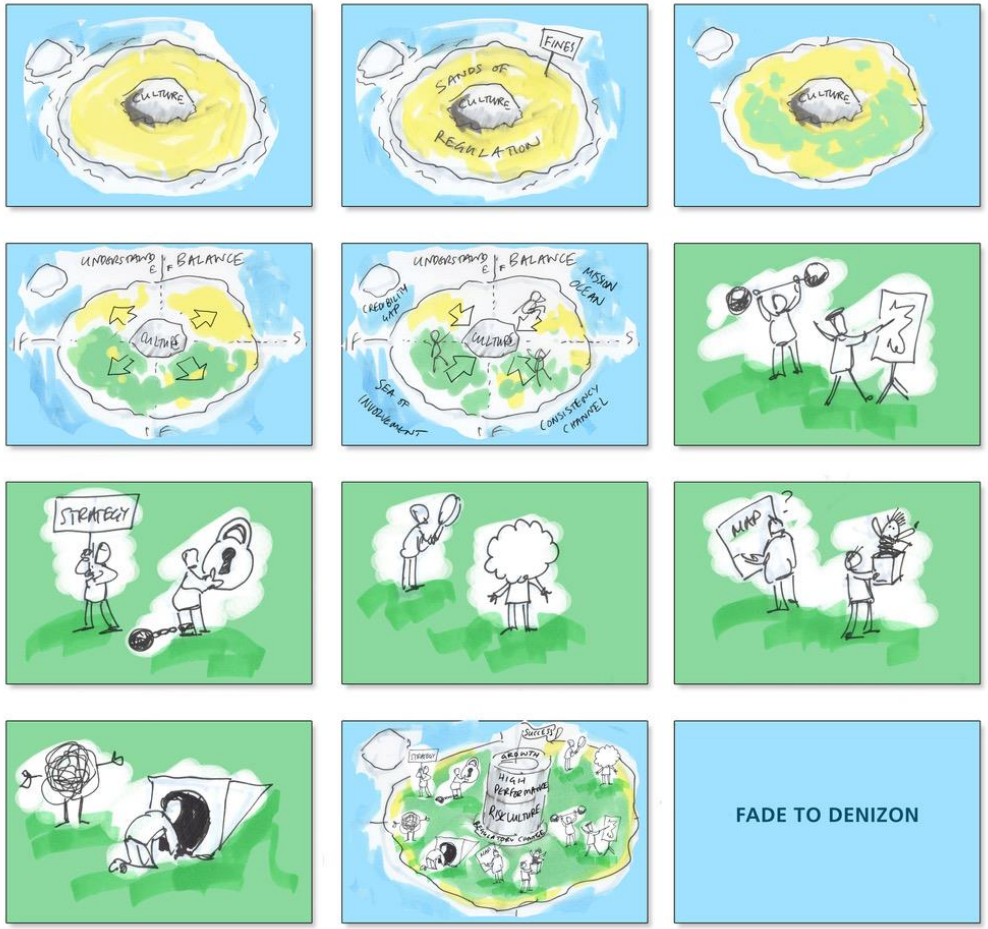
Storytelling from Day 2



Thank you!

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