

BEIS

Net Zero Innovation Portfolio: Industry of Future

13th July 2021





Welcome, Purpose & Agenda

Purpose: to present our thinking for a speculative Industry of Future innovation competition and seek your views.

Agenda:

Time	Item	Lead
13:30 - 13:40	Welcome & introductions	Kevin MacLennan – Mott MacDonald
13:40 – 14:00	Context and background to industry of Future Programme	Tony Allen & Solmaz Parsa - BEIS
14:00 – 14:10	Q&A	Kevin MacLennan – Mott MacDonald
14:10 – 14:30	Proposed scope for industry of future innovation competition	Sandy Nimmo – Mott MacDonald Adriana Vargas-Colwill - BEIS
14:30 – 14:40	Break	
14:40 – 14:50	Q&A	Kevin MacLennan – Mott MacDonald

XLeap and Process

- We will be using **MS Teams** and **XLeap** in this session. XLeap runs separately outside of MS Teams in your internet browser.
- Key combinations to toggle between MS Teams & XLeap
-  
- We will use XLeap to facilitate a text-based discussion to enable us to gather your questions and comments today. All questions and comments shared will be recorded anonymously in the software.
- As a general rule please remain on mute  and off camera 
- Any problems as we go please use the MS Teams chat.

ThirdS contract

- Mott MacDonald and Ricardo have been supporting BEIS on the Energy Innovation Portfolio since 2018.
- As part of this wider delivery, Mott MacDonald & Ricardo are supporting BEIS in the development of the Industry of Future Programme.
- Activities include hosting event, developing eligibility criteria, writing application forms & guidance and reviewing applications from industrial sites.

Conflict of Interest

- Overview of EISP approach to managing Conflict of Interest under the existing framework.
 - Follow Mott MacDonald's policy of managing COI
 - Follow EISP Separation Protocol approved by BEIS, e.g. all staff are required to complete the 'Conflict of Interest Declaration', 'Security Note', etc. before working on the project.
 - Ringfenced a small team to support BEIS with the programme design for the industrial emitters selection only
 - Work on BEIS' project site so material is accessible on a permission-controlled SharePoint folder only available to the programme design team
 - Any programme scope and tender evaluation criteria developed would be shared with all bidders

NZIP Industry of Future Competition:

Context & Background

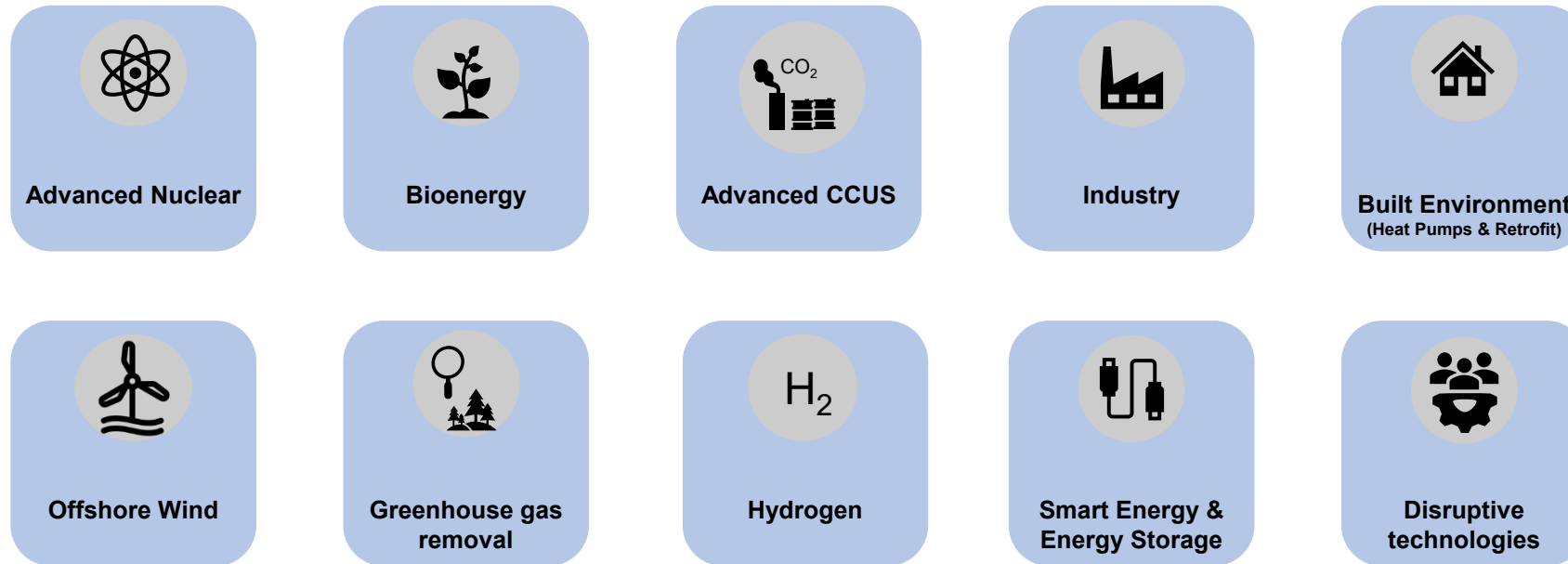
This is speculative, and subject to change

Context: Industrial Decarbonisation


- 16% (72 Mt CO₂e) of greenhouse gas emissions come from industry (2018)¹, of which Clustered sites are responsible for 37.6 MtCO₂e and Dispersed sites for 33.6 MtCO₂e
- As Net Zero by 2050 requires near-complete industrial decarbonisation, switching industry from high to low carbon fuels will be vital
- Industrial decarbonisation technologies need to be ready for large-scale deployment from the 2030s
- Developments in Policy landscape: Industrial Decarbonisation Strategy, upcoming Hydrogen Strategy
- Industrial Decarbonisation Strategy sets out expectation for industrial emissions reduction of two-thirds by 2035 and at least 90% by 2050 (compared to 2018)

Net Zero Innovation Portfolio (NZIP)

- **£1bn** of funding for **innovation** over **4 years** (2021 – 2025)
- As per the “Ten Point Plan for a **Green Industrial Revolution**”



Industry & Advanced CCUS Theme




Advanced CCUS



Industry



Green Distilleries




CCUS




Industrial Fuel Switching



IEEA



Red Diesel



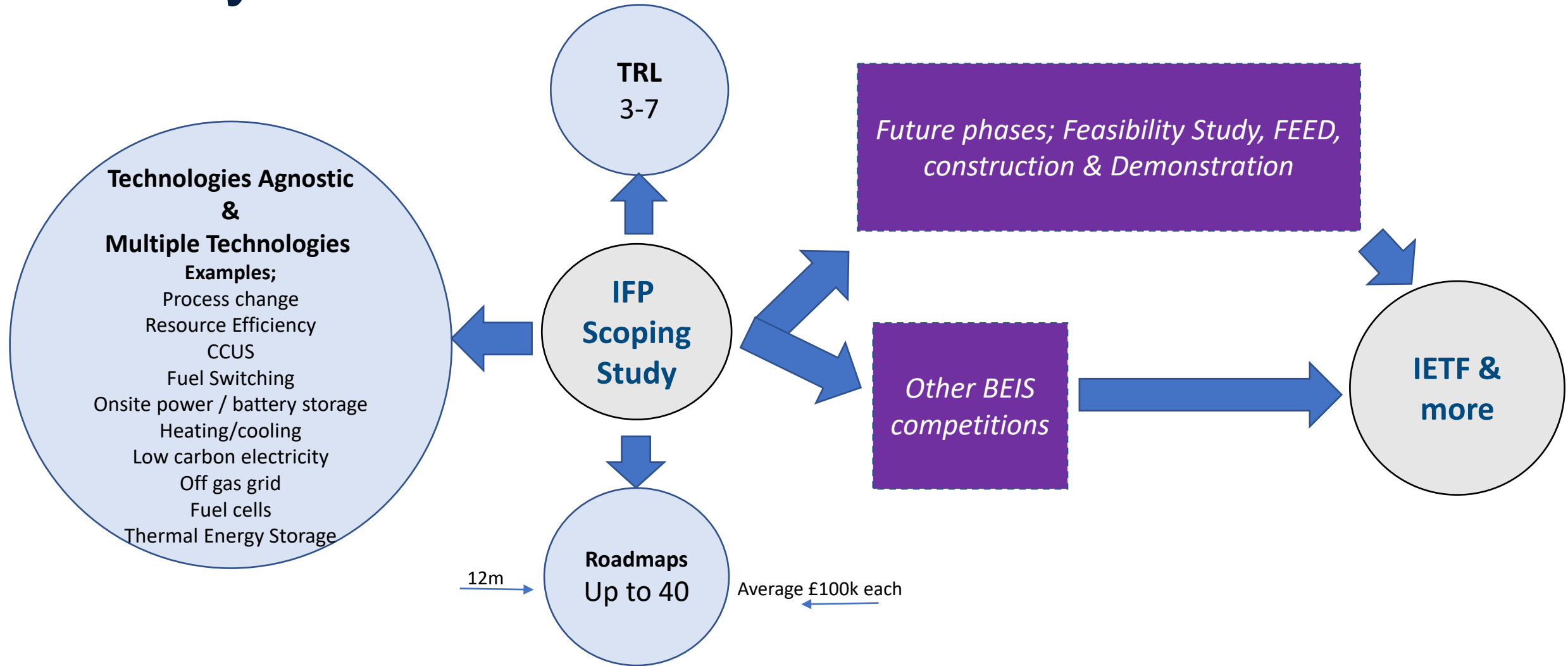
Industry of Future

Industry of Future – Proposed Objectives

The Industry of Future Programme (IFP) aims to:

- Increase options available to industry to help accelerate decarbonisation
- Engage directly with industry to identify requirements, assess equipment and develop solutions
- Develop innovative solutions and implementation plans for up to 40 sites
- Increase Government and market understanding of site and sectoral technology gaps and availability
- Allow companies to consider the next generation of industrial decarbonisation and Energy Efficiency technologies, and to help them to better navigate the complex technology landscape, allowing them to transition to net zero more quickly and effectively

Industry of Future



Industry of Future – Who is it for?

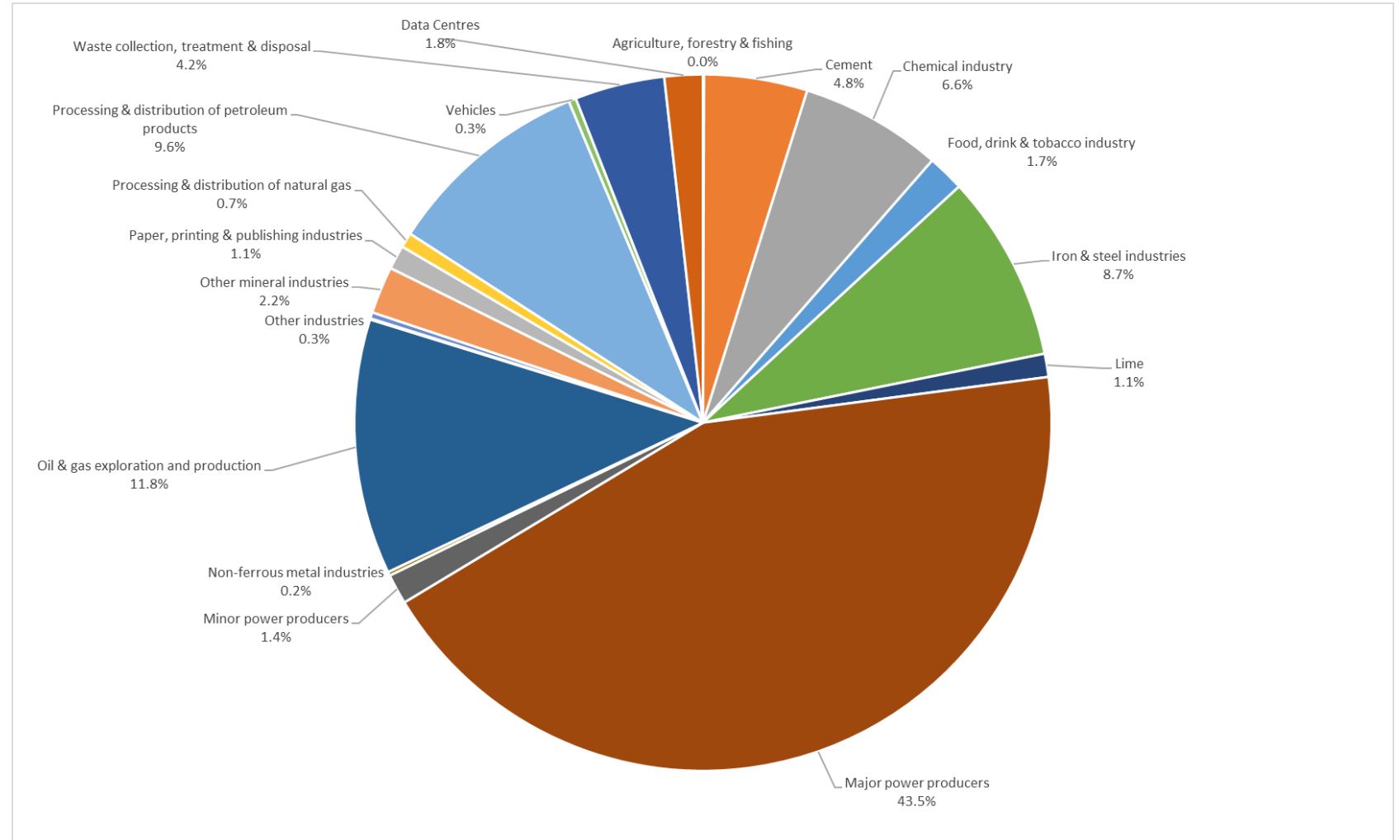
- The IFP is aimed at industrial sites with high carbon emissions
- Sites outside of existing industrial clusters will be prioritised. We would also encourage industrial collaboration in local areas.
- The programme is aimed at supporting industrial sites who require assistance to develop a roadmap to decarbonisation

Industry of Future – Who is it for?

Emissions bracket (tCO2e/year)	% of total emissions	Total Sites	Total Sectors
Over 100,000	70%	75	10
50,000 – 100,000	12%	60	9
10,000 – 50,000	13%	199	15
5,000 – 10,000	3%	158	17
Under 5,000	3%	660	20

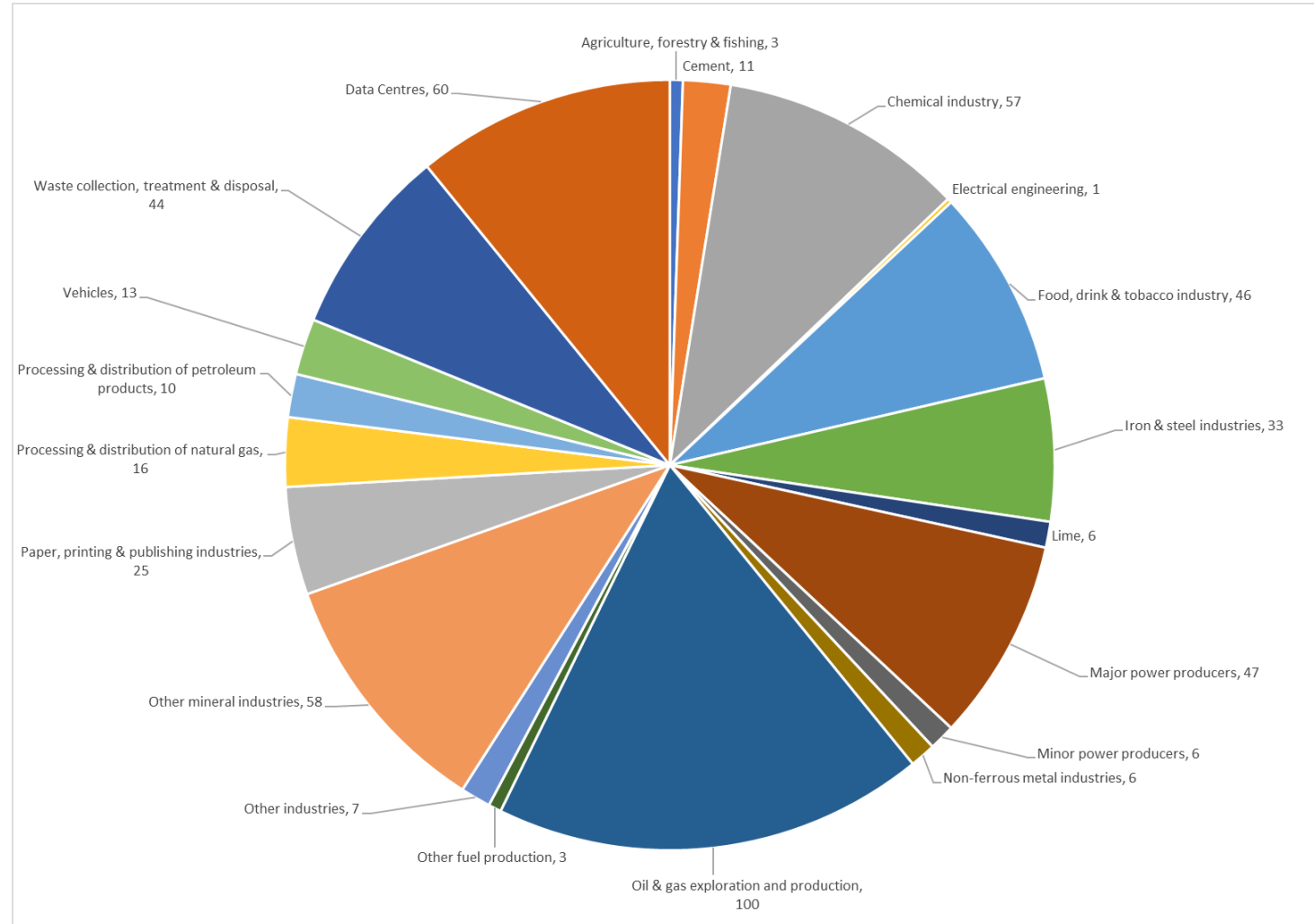
Industry of Future – Who is it for?

Industrial CO2 emissions, Sites ≥5kt CO2/year, (2018)

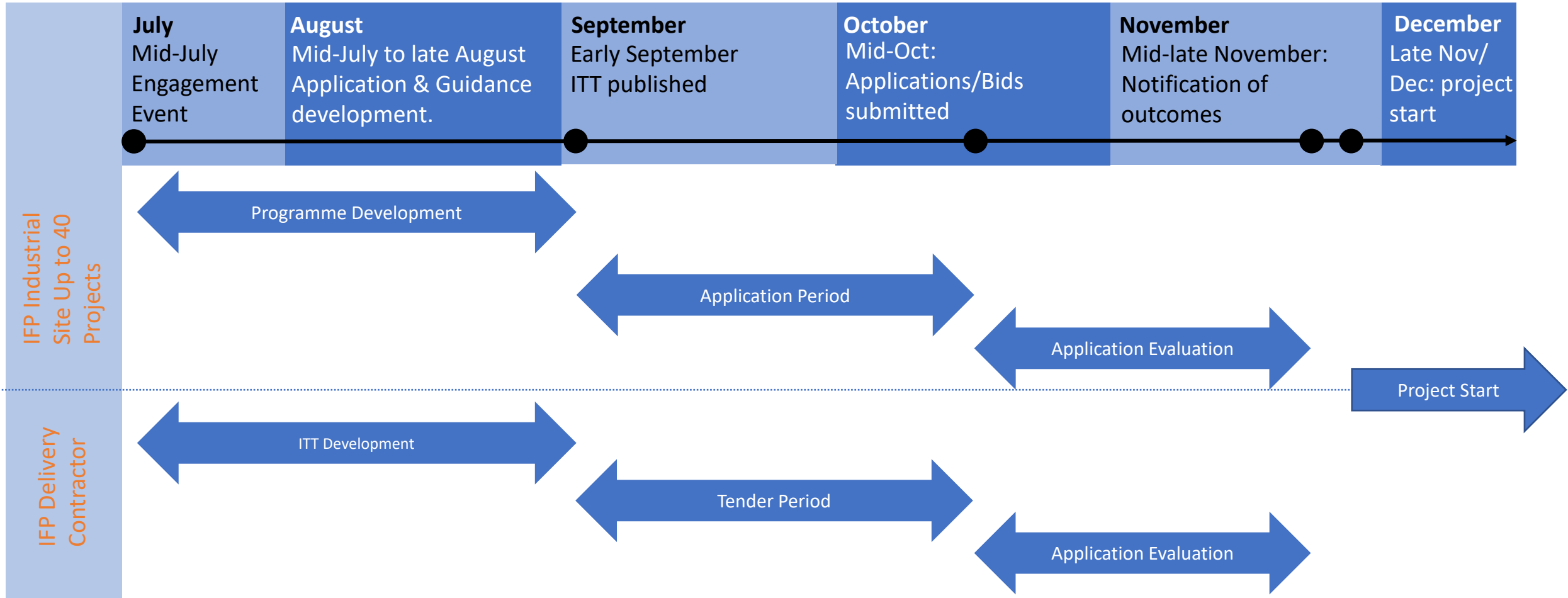


Industry of Future – Who is it for?

Industrial CO2 emissions, No. Sites ≥5kt CO2/year, (2018)



Industry of Future – How would it run?



Industry of Future – How would it run?

- Proposed scope for roadmap support:
 - Whole site coverage
 - Data collation & analysis
 - Site surveys
 - Long list opportunity identification
 - Fuel switching
 - Energy efficiency
 - On site generation
 - Technology gap analysis
 - Constraints and opportunities analysis
 - Roadmap options development
 - Identification of preferred option
 - Development of shortlist of priority projects

Industry of Future – How would it run?

Anticipated outputs:

- Delivery of a site-specific roadmap, to include the following:
 - Overview of site infrastructure
 - Emissions baseline
 - Technology review and GAP analysis
 - Options appraisal of potential routes to Net Zero
 - Detailed Roadmap of Shortlisted option, including distinct packages of work and development requirements.
 - Conclusions and recommendations for further work

Procurement Route



Scoping Study: Single stage Contract



Funding will be available for follow up activities

Q&A on the background and context?

(10 minutes)

NZIP Industry of Future Competition:

Proposed Scope

This is speculative, and subject to change

What We Can/ Cannot Change

When giving feedback, please bear in mind:

- We cannot change policy or the market conditions
- We cannot change the overall competition objectives
- We cannot change the overall competition budget
- We cannot change the length of the competition - the funding period ends on 31st March 2025
- We can update the design of the competition based on your views

Competition Objectives

- IFP aims to innovate and commercialise decarbonisation and energy efficiency technologies in UK industrial sites
- Ensure a rapid, interlinked, and consistent decarbonisation process as the ideal pathway to accelerating the demonstration of technologies in UK industries
- Enable organisations to bring their CO₂ emissions close to zero with a combination of approaches
- Strengthen supply chains and skills for industrial decarbonisation around the UK
- Gather evidence to inform future industrial decarbonisation policy making.

Proposed Eligibility Criteria for Funding

Item	Subject	Eligibility
1.	Location	Only industrial sites in the United Kingdom are eligible.
2.	Retrospective work	Retrospective work is excluded and shall not be funded under this programme
3.	Organisation type	Industrial emitters including data centres
4.	Thresholds	Emissions: over 5 kt CO ₂ e per site. Scope 1 & 2 emissions

Proposed Eligibility Criteria for Funding

Item	Subject	Eligibility
5.	Additionality	Evidence must be provided to show that innovation would not progress without public funding
6.	Parent Company Approval	Organisations must have relevant approvals in place upon application
7.	Access to site & data	Participating sites must provide relevant data and site access to the delivery contractor
8.	Project end date	Projects must be completed by November 2022

Technology

Programme will be technology agnostic, however we anticipate that roadmaps will consider a **combination** of:

- Fuel Switching
 - Electrification
 - Hydrogen
 - Sustainable biomass
- On-site Carbon Capture

Technology

Programme will be technology agnostic, however we anticipate that roadmaps will consider a **combination** of:

- Energy Efficiency & optimisation
- Heating & cooling equipment
- Low carbon electricity
- Fuel production
- Industrial heat pumps
- Renewable energy
- Thermal Energy Storage

Lots

Lot No.	Lot description	Examples (not exhaustive)	% of funding	Approx. No. of eligible sites	Max. No. projects
1	Over 100 kt CO ₂ e	Cement, Iron & Steel, Chemicals	25	75	10
2	50 – 100 kt CO ₂ e	Chemicals, Cement, Iron & Steel	25	60	10
3	10 – 50 kt CO ₂ e	Glass, Paper, Food & Drink	25	200	10
4	5 – 10 kt CO ₂ e	Food & Drink, Automotive, Chemicals	25	180	10

Technology Exclusions

The following are excluded from this competition:

- Fuel switches that increase GHG emissions.
- Fuel switches to unsustainable biomass sources.
- Fuel switches to natural gas
- Switching of feedstocks, except where feedstock provides chemical energy to drive the process (e.g. reduction of iron).
- Fuel production to be used for the fuel switch.

Feedback on Exclusions

Questions:

Do you think there are any issues with this list of excluded technologies?

- Fuel switches that increase GHG emissions.
- Fuel switches to unsustainable biomass sources.
- Fuel switches to natural gas
- Switching of feedstocks, except where feedstock provides chemical energy to drive the process.
- Fuel production to be used for the fuel switch.

Proposed Assessment Criteria (Site Emitters)

Criteria	
1	Site constraints: such as space on site, existing plant economic life.
2	Cluster potential: Development of new clusters with nearby industrial sites is encouraged.
3	Existing clusters may partner with adjacent sites outside their cluster.
4	Replicability: Extent to which the outputs of the roadmap for the applicant could be used as an “off the shelf” approach for similar sites due to similarity of process
5	Technology diversity: the variety of technologies covered by the application.
6	Economic benefits: wider benefits beyond the primary site activities.

Minimum score of 60% in application to be eligible for funding

Proposed Assessment Criteria (Site Emitters)

Criteria	
7	Carbon abatement potential of existing site infrastructure.
8	Knowledge sharing potential of proposed roadmap.
9	Additionality: Evidence must be provided to show that innovation would not progress without public funding.
10	Innovation Potential: Overview of innovation requirements for decarbonising site processes. What types of innovative technologies are anticipated and what is current technology maturity.
11	Potential synergies with existing decarbonisation initiatives in region

Minimum score of 60% in application to be eligible for funding

Proposed Assessment Criteria (Delivery Contractor)

Criteria	
1	Technical and regulatory feasibility, and performance of decarbonisation and energy efficiency technology solutions
2	Proposed Methodology – details of the contractors proposed approach to the delivery of roadmaps
3	Social Value - wider value to society (i.e., jobs, education etc.)
4	Project financing – project costs, value for money, additionality
5	Project delivery – Team, project plan and risks

Minimum score of 60% in application to be eligible for funding

Proposed Timeline (subject to change)

Activity		Date
Scoping Study (For both Industrial Emitters and Delivery Partners)	Open to Applicants	01/09/21
	Close to Applicants	04/10/21
	Project Start	22/11/21
	Project Complete	01/11/22
Follow-up activities	Including feasibility study, FEED study, small demonstrations	Dec 22-Mar 25

4-6 weeks to complete applications

~12 months for Scoping Study

Feedback on Timeline

Questions:

Do you have any comments or feedback on the proposed timeline?

Does the split between Scoping Study and follow-up activities seem appropriate?

Note: we cannot change the end date of 31/03/2025

Feedback on Proposed Eligibility & Assessment Criteria

Questions:

Do you have any comments on the proposed eligibility criteria?

Do you have any comments on the proposed assessment criteria?

Break
(10 minutes)

BEIS Next Steps

- Publish this presentation and Q&A
- Finalise competition design
- Announce/launch later this year

Q&A on the proposed competition scope?

(15 minutes)

Thank you for Joining,
BEIS