



# IRISCAST: IRIS Carbon Audit Snaphot

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IRISCAST Project PI

IRISCAST Workshop  
10<sup>th</sup> January 2023

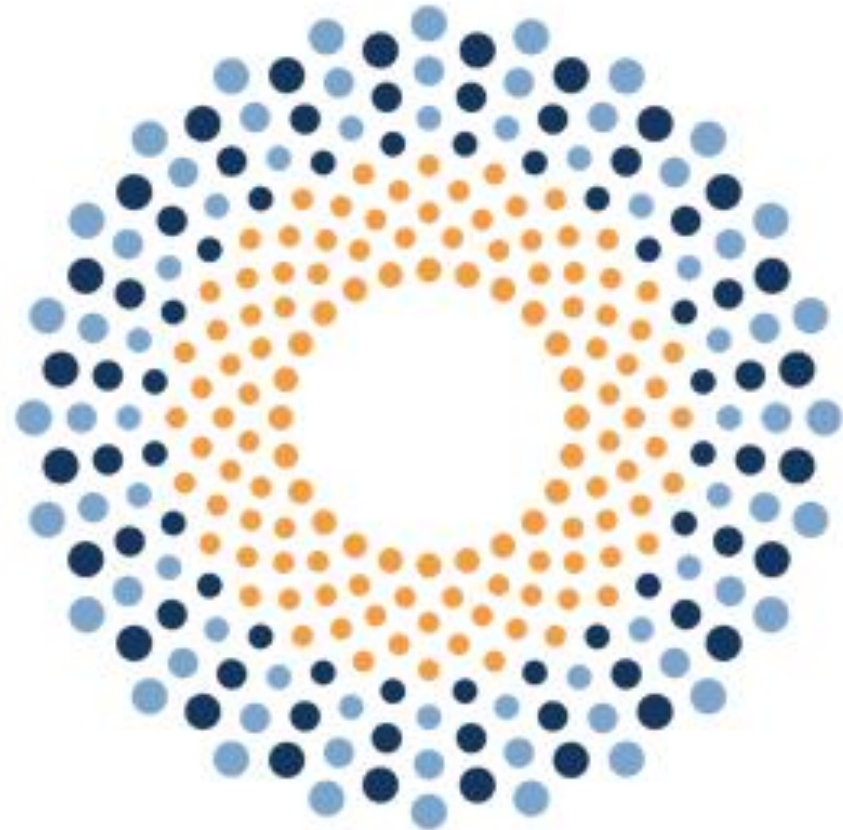


# iris eInfrastructure for Research and Innovation for STFC

IRIS is a cooperative community bringing together (mainly) STFC computing interests

Formed bottom up by science communities and compute providers

Works closely with STFC but run by the community



# IRIS-CAST – The Carbon costing for computing Audit Snapshot

## Good robust decisions need good robust information

### Challenges/questions

Estimating the carbon costs for scientific computing across a broad heterogeneous landscape

Identifying the key drivers

Identifying the hurdles and barriers

Communicating the costs to drive change

Working coherently across different communities



### Actions and Objectives

Work together coherently across different facilities with different remits, tooling, and capabilities.

Learn by doing!

Document the gaps, the barriers and the issues, drive requirements for future work and decision making

Communicate across our communities and build a foundation for future action



# IRIS-CAST – The Carbon costing for computing Audit Snapshot

Good robust decisions need good robust information



IRISCAST is a 6 month project funded within the UKRI Net Zero Scoping Project

## Project Team

Alison Packer (STFC)  
Anish Mudaraddi (STFC)  
Derek Ross (STFC)  
Dan Traynor (QMUL)  
Jon Hays (QMUL)

Alex Owen (QMUL)  
Dan Whitehouse (Imperial)  
Adrian Jackson (Edinburgh)  
Alastair Basden (Durham)  
Nic Walton (Cambridge)  
Alex Ogden (Cambridge)



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## Facilities

QMUL GridPP Tier 2

Imperial GridPP Tier 2

STFC SCD Cloud

STFC SCARF

DiRAC (Durham)

Cambridge IRIS HPC/Cloud





# IRIS-CAST – The Carbon costing for computing Audit Snapshot

Good robust decisions need good robust information

Inventory

Data collection

Analysis

Community Engagement



## IRIS-CAST – The Carbon costing for computing Audit Snapshot

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### Inventory

- Define the scope of the audit
- Build a comprehensive list of all equipment covered by the audit
- Needed to build carbon model including embodied costs

DONE



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### Data Collection

- Collect data over a 24 hour period covering differing operating conditions
  - Rack, Node, and Job level logging
- Store data in central repository

DONE





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## Analysis

- Integrate the different datasets into coherent curated data set
- Refine carbon model
- Extract insights, observations, and conclusions

*In progress*



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### Community Engagement

- Talk at CIUK
- Produce draft report
- Publish curated data set and definition of the carbon modelling
- Engage with our communities through an IRIS Workshop – 9<sup>th</sup>, 10<sup>th</sup> January in Cambridge

*In progress*



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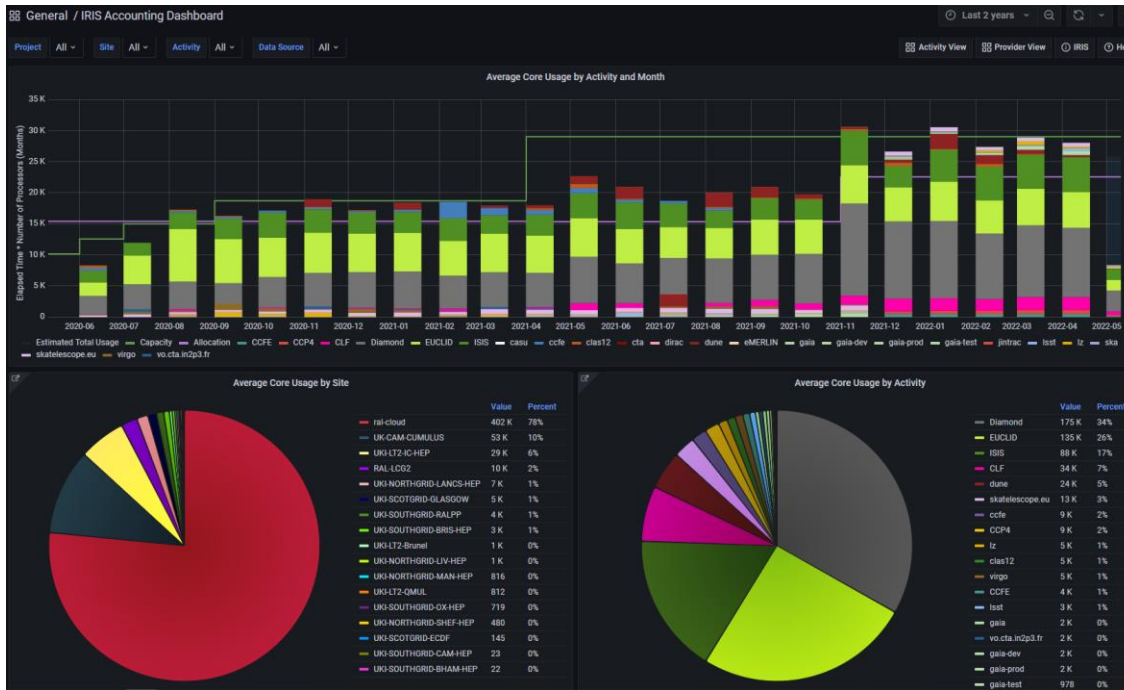
Next steps...





# iris Proposal Outline

## IRIS-CAST – The Carbon costing for computing Audit Snapshot



IRIS Accounting data – demonstrating diversity of providers (bottom left) and user groups (bottom right)

### Project outline:

#### Stakeholder engagement workshop

Defining the parameters of the audit

#### Planning and Development

Technical set up for the audit

#### Audit

Data collection over 3 well defined periods

#### Community Engagement Workshop

Interpreting, reviewing, and communicating the audit outcomes (including technical review by Preist and Schien)

### Key Outputs:

Curated audit data set

Final report