



EGI-ACE Green Computing Survey

Results Analysis

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Green Computing Survey



Context

EGI-ACE project is proposing to contribute to efforts to transition to a low-carbon and competitive economy

- through Green Computing and ICT Sustainability
- by maximising positive environmental benefits
- by minimising negative impact

Task T7.2 (Service Planning and Green Computing)

- is coordinating the Green Computing activities by developing and applying best practices
- is providing necessary training and putting into place prerequisites in order to:
 - measure, monitor and improve energy usage at data centres during the project

Green Computing Survey



Preparation

T7.2 members met early this year several times to discuss the survey content

Purpose to take a snapshot of existing GC status across EGI-ACE partners

Also to identify potential members of GC Task Force – aimed to coordinate further activities and measure progress and improvements during the project

EUSurvey tool used - <https://ec.europa.eu/eusurvey/home/welcome>

40+ questions (incl. dependency questions)

Complexity – ‘too high’ – we could not avoid it!

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Launch

A couple of 'friendly users' asked to fill in the survey before launching it

Final touches and...

...GC survey made public on 19 July 2021

Invitations to fill in the survey sent to various EGI-ACE mailing lists (incl egi-ace-all@)
- several reminders during the Summer

Survey closed on 31 August

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Brief analysis

16 responses

13 countries – IT, PL, SK, FR, CZ, HR, TR, NL, ES, LV, PT, GE, UK

Research infra, Research institutes, Computing/Data centres, NREN, eInfra

MANY THANKS!!

Green Computing Survey



Detailed analysis

No details about respondents are provided, but if...

- you recognise your answer(s) in the next slides and...
- you want to give more details / explanations (or to show off your GC achievements) then...
- you are more than WELCOME to 'raise hand' and speak!

Green Computing Survey



Detailed analysis

Does your organisation track any Green Computing metrics? - 9 related questions

9 YES

1 Don't know

9 Power Usage Effectiveness (PUE) → target is 60% of data centres

- 2 sites shared figures – (1.05-1.08 and ~1.3) and ~1.02

3 Water usage

- Closed circuit cooling, open circuit cooling

1 CO₂

1 Energy consumption per rack

8 initiate measures to improve

3 comparisons with peers

2 publish

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Detailed analysis

Does your organisation have a role responsible for Green activities? - 2 related questions

3 YES

2 Don't know

CSR (Corporate Social Responsibility) Policy Advisor
Health Physics Group Manager

Do you have a Green Computing policy? - 2 related questions

2 YES

3 Don't know

Both shareable !!

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Detailed analysis

Do you have an institution wide GC related awareness raising / training programme? –
6 related questions

2 YES (and no mandatory)

1 prepared to share it

3 plan to introduce in the future

8 would introduce if provided !!

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Detailed analysis

Do you plan work / systems to optimise / minimise GC impact? – 3 related questions

13 YES

Incentive to do so? – 1 YES, 9 NO, 3 Don't know

Green power supplier available?

An energy supplier is considered 'green' if one or more of their tariffs are supplying energy from renewable sources (wind farms, hydroelectric power stations or nuclear-free).

10 YES

3 Don't know

Do you use a Green energy supplier?

5 YES

3 YES if available

Green Computing Survey



Detailed analysis

Do you use any green power initiatives? – 3 related questions

0 YES

9 Don't know

7 NO

Why?

- *No incentives, increased price no compensated*
- *No direct management over the power supply contracts*
- *Not a priority*
- *Expensive*
- *No ability to choose the power provider*

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Detailed analysis

Existing related certifications? – 3 related questions

3 YES

ISO 9000, ISO 27000, ISO 50001, ISO 14001

Nothing on near future

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Detailed analysis

Proactively source Green Labelled hardware? – 4 related questions

Green Labelled hardware is designed to reduce energy expenditure and reduce the impact that computers have on the environment. It can bears various ratings, evaluations and certificates such as ENERGY STAR, EPEAT, TCO Certified.

5 YES

4 Don't know

What is 'green'

- *Energy efficiency, Energy Star/TCO, responsible use of resources*
- *Better recycling, less power consumption, EPEAT GOLD label*
- *Energy Star rating*

Will source Green Label? – 1 YES

Aware of Green Label? – 3 YES

Green Computing Survey



Detailed analysis

Do you use 'green' decommissioning services? – 2 related questions

7 YES !!

3 Don't know

Because?

4 due to legislation

3 voluntary

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Detailed analysis

'Green' clauses included in standard contracts and procurement processes?

5 YES

4 Don't know

Purchase decisions based on lifetime power / carbon costs of equipment?

6 YES

2 Don't know

Prepared to share typical procurement clauses?

2 YES !!

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Detailed analysis

Participation in any form of carbon credit trading?

0 YES

1 Don't know

Waste energy reuse? – 3 related questions

2 YES - office/building heating in the winter

4 Don't know

NO because

- Facilities are rented
- Data centre not designed for this
- Not efficient for current power consumption
- Not available
- Costs (old buildings)

Green Computing Survey



Detailed analysis

Other comments

Our focus is mainly on power consumption and efficiency. Regarding hardware we select the equipment based on the best ratio of power consumption / performance. We also specify efficiency for the power supplies

Yes, we are actively working on co-implementing a framework for energy management & accounting on a national supercomputer. This framework apart from providing accurate energy consumption info at the job level should also help in tuning the hardware depending on application characteristic

We plan to use some automatic dynamic cluster size management tool

It would be good to get some templates/best practices of RFPs which take into consideration power efficiency, which are in line with the European public procurement law. They need to be adjusted anyway to be in line with the local law, but it'd be a good start

Green Computing Survey



Conclusions

EGI-ACE project – 33 beneficiaries + 10 linked third parties

Initial target – min 10 respondents

16 respondents – decent outcome

By a 'raise hand' – anyone keen to fill in the survey now?

- you'll have a chance next year!

WHAT to do with these results?

Green Computing Task Force

GC Survey follow-up

Green Computing Task Force created

- milestone within EGI-ACE
- to coordinate the GC activities of the compute centres participating in EGI-ACE and beyond within the EGI Federation
- T7.2 people initial members
- online space - <https://confluence.egi.eu/display/EGIBG/Green+Computing+Task+Force>
- Terms of Reference - <https://documents.egi.eu/document/3848>
- mailing list – *green-computing-tf* AT *mailman.egi.eu*
- unanimously agreed within T7.2 to invite the representatives of the 16 respondent sites to join the Task Force (along with T7.2 members as co-chairs of TF)
- kick-off meeting – today Thu 16 Dec

Green Computing Task Force



Kick-off meeting outcome

Inform audience about TF online space and ToR

TF meeting frequency – every 8 weeks – Thu 15:00 CE(S)T ?

- other frequency / day of the week / time?
- mailing list expected to be used outside meetings
- any extra involvement much appreciated (and encouraged) in between

T7.2 meetings - the other every 8 weeks – also Thu 15:00 CE(S)T

- you are welcome to join for GC topics

Invitations will be appropriately circulated

Invite more people to join the task force

- please contact [catalin.condurache AT egi.eu](mailto:catalin.condurache@egi.eu)

Plan of actions - see Paul's next slides





Thank you!

Contact: egi-ace-po@mailman.egi.eu
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