

Greening ICT & Greening Through ICT

ACCT 2011 PANEL
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Le génie pour l'industrie

Laboratory for Multimedia
Communication in Telepresence

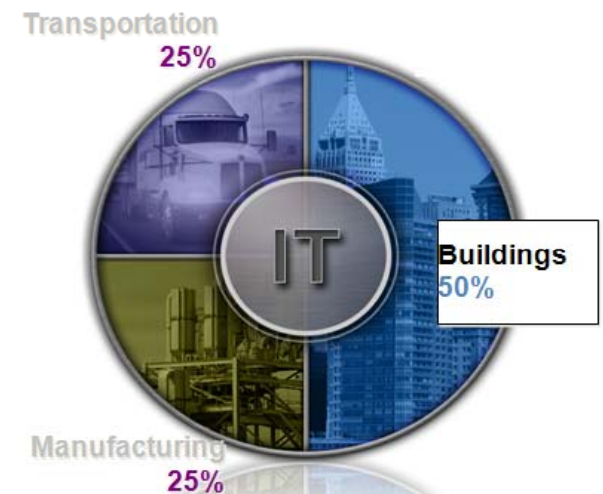


ICT Energy & Environment

- ★ Climate Change is not reversible
- ★ Urgent need to develop low carbon solutions
- ★ ICT is a major consumer of power (8% in the US) and CO₂ production which is growing at **6% per year**

The problem requires not only
Energy Efficiency
BUT also **GHG Reduction** using
Renewable resources

- ★ **The Goal** is to provide **ICT Services** with **renewable energies**
- ★ **ICT sector** can be a leader in **GHG reduction**



Slide 2

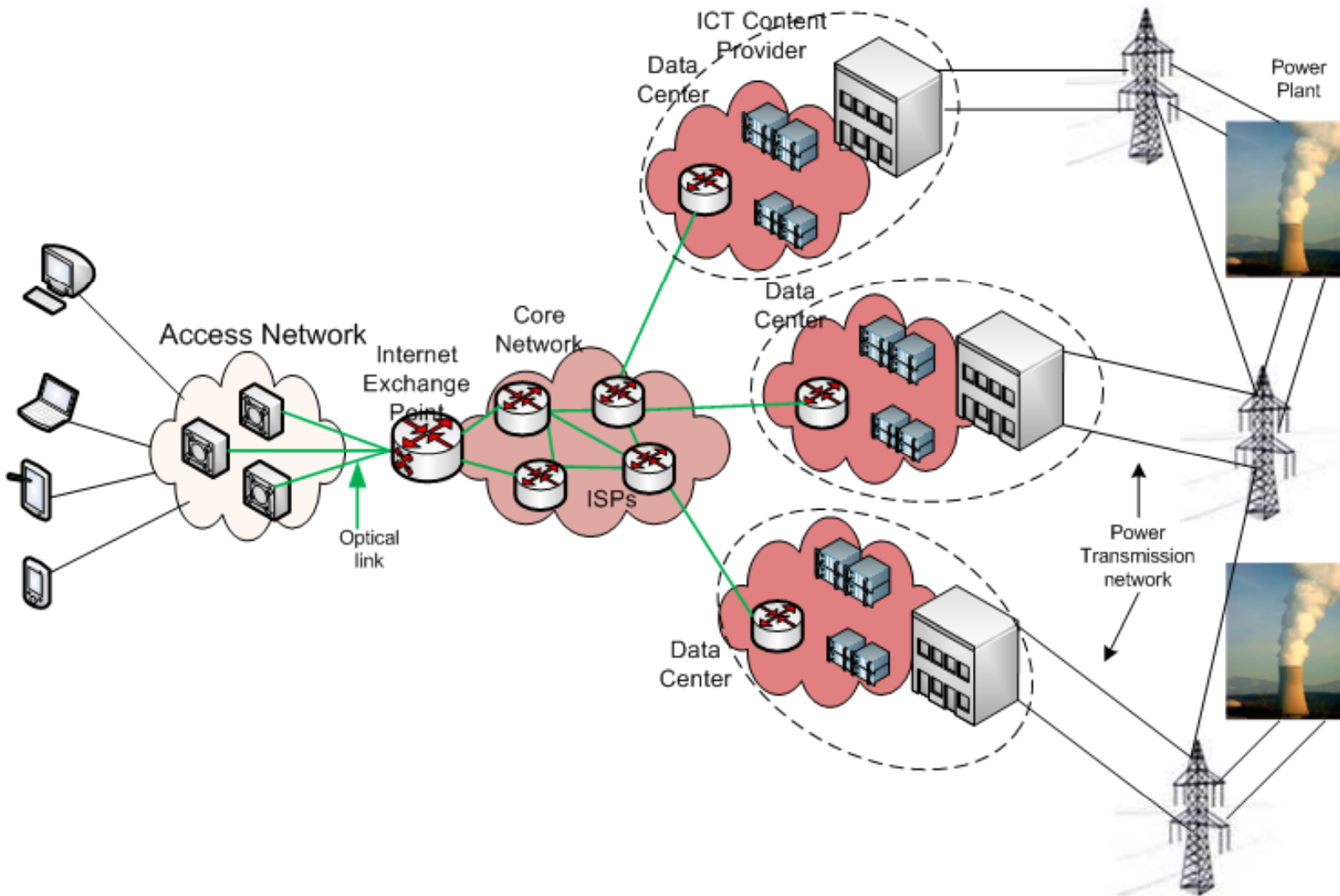
ML2

Je trouve la slide très "verbose"... c'est OK pour lire les slides mais ça serait bien de "couper" un peu de texte si c'est présenté live...

Mathieu Lemay, 9/7/2010

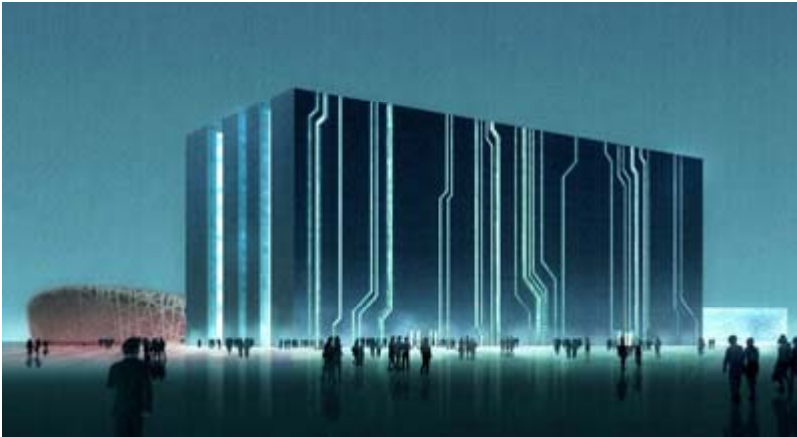
ICT Energy & Environment

The current Internet



ICT Energy & Environment

Example of Data Centers



Beijing Olympic Data Center,
1 000 000 fs, 80 MVA



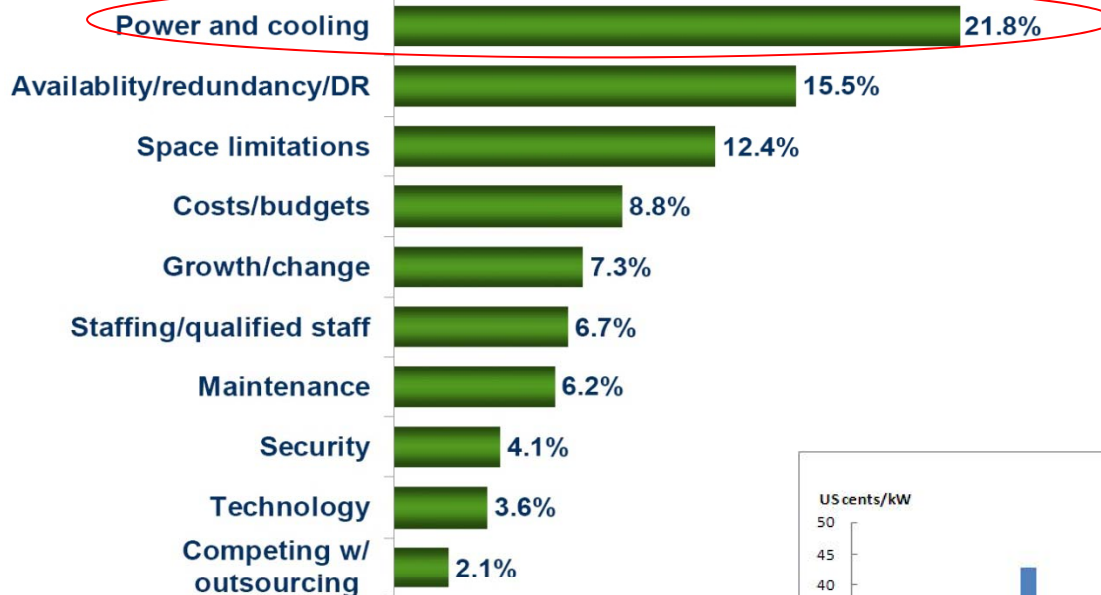
Lakeside Technology Center, Chicago
1 100 000 fs, 100 MVA



Next Generation DCT Newport, GB
750 000 fs, 90 MVA

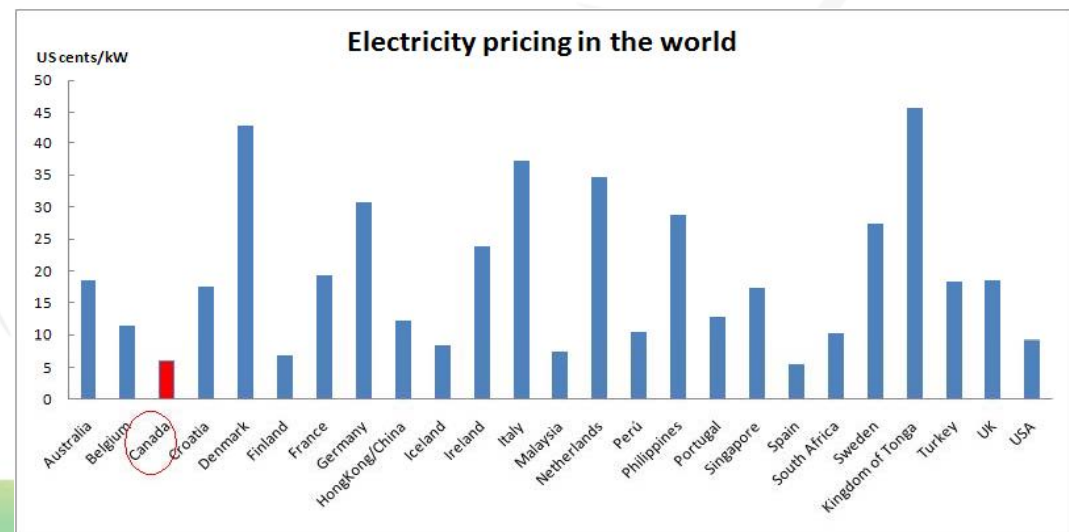
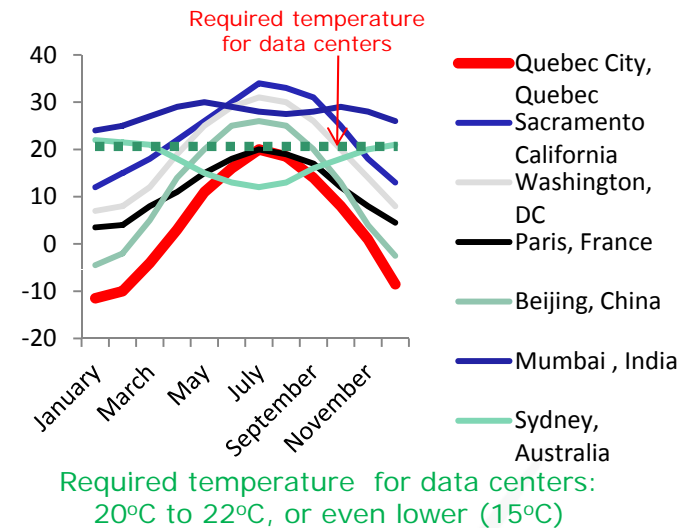
ICT Energy & Environment Challenges - Solutions

What is the **number one challenge** your data center faces today? *



*Source: IDC Inc.

What do Canada & Quebec offer ?





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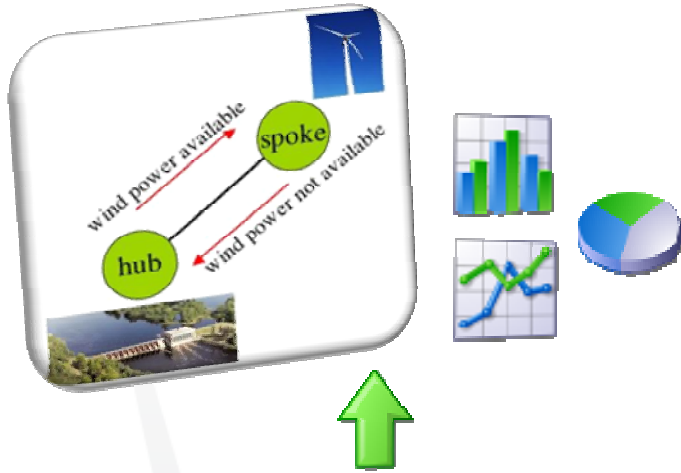
The GreenStar Network Solution

How to keep IT service green?

- ★ Energy efficiency techniques
- ★ Data centers powered by renewable energy sources (e.g. hydroelectricity, solar, wind)
- ★ Separate infrastructure ownership and maintenance from usage
- ★ All-optical Core network
- ★ IT service is migrated around nodes when power dwindles
- ★ Virtualization and Cloud Computing must be implemented
- ★ Scalable & Flexible management for intermittent energy sources

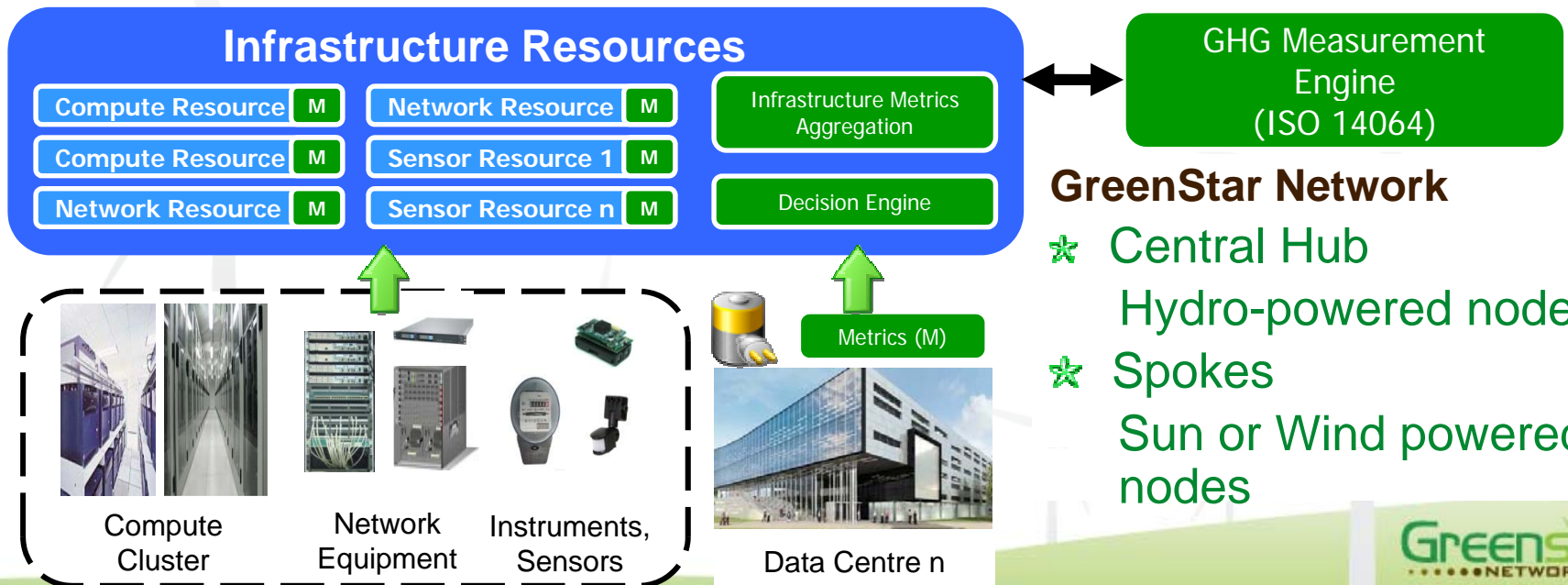
The GreenStar Network Solution

World's First Zero Carbon Internet & Cloud



GSN Green IT Pilot Goals:

- (i) Distributed Cloud Software
- (ii) **Follow the Sun/Wind Energy**
- (iii) Carbon protocol, GeoChronos relocation

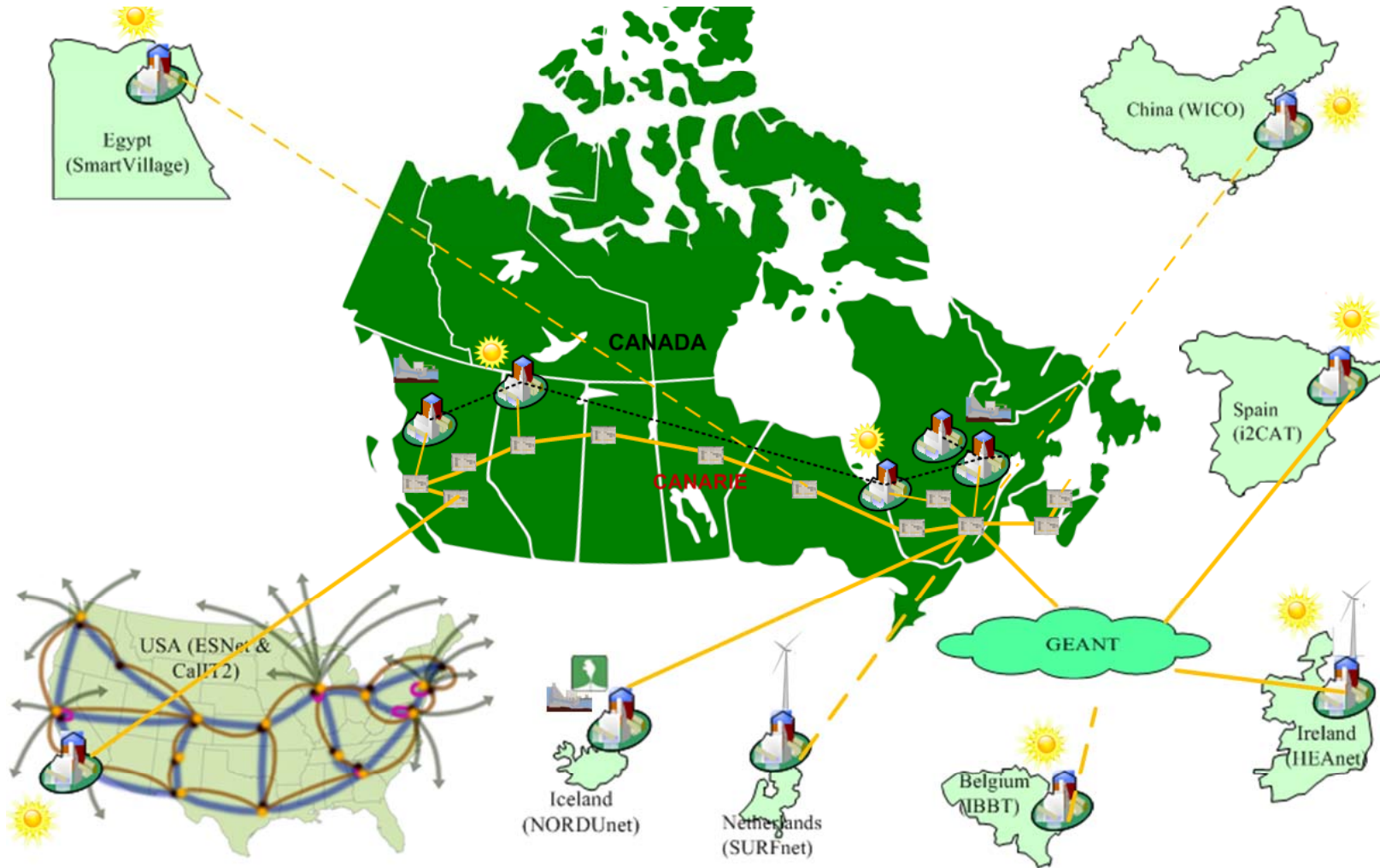




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The GreenStar Network Map

GreenStar Network – World's First Zero Carbon Network & Cloud

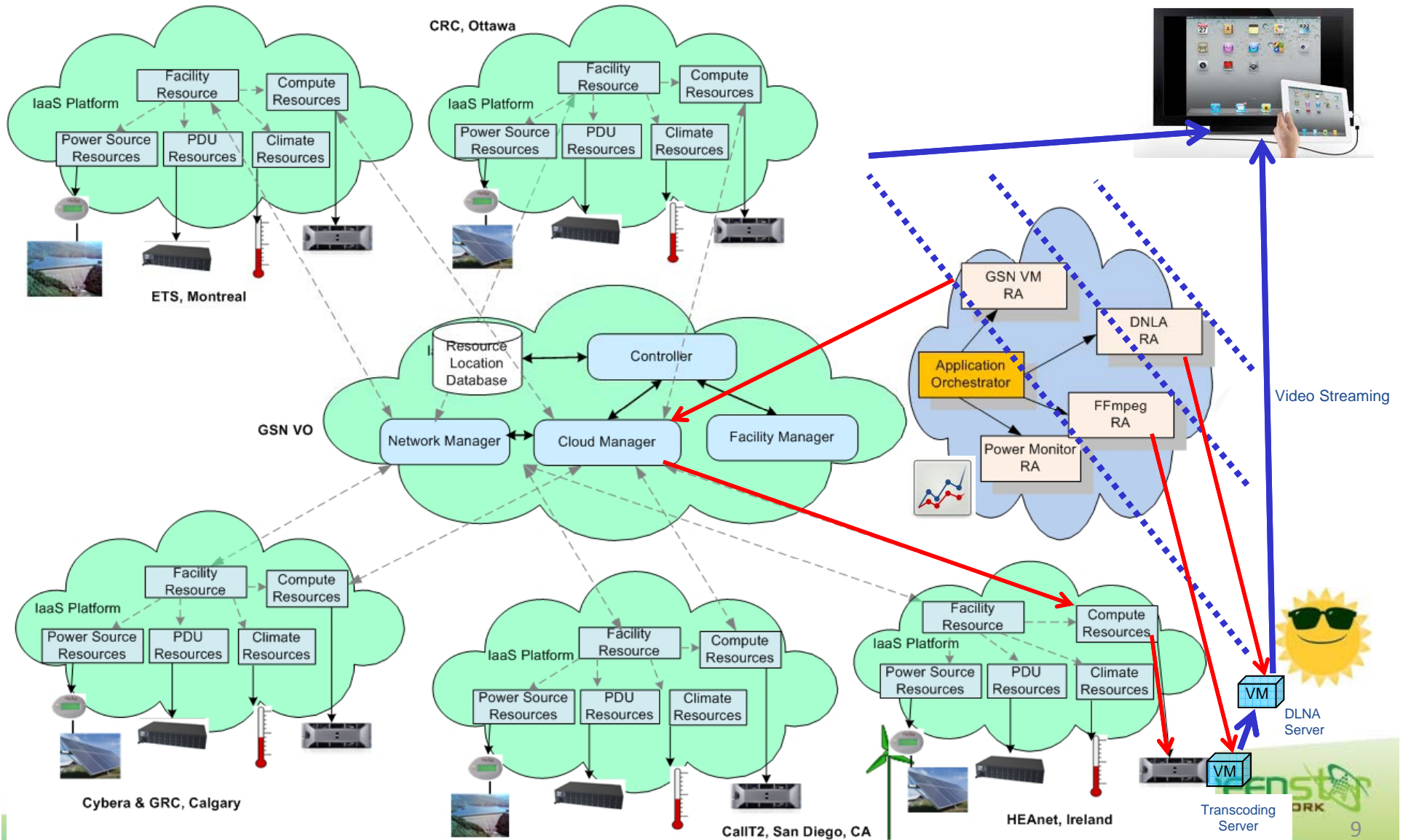




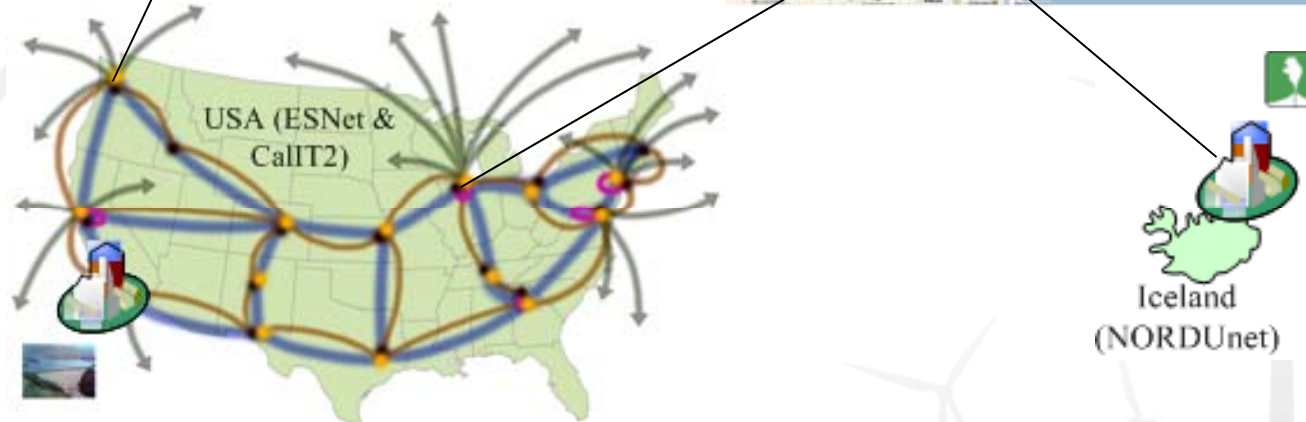
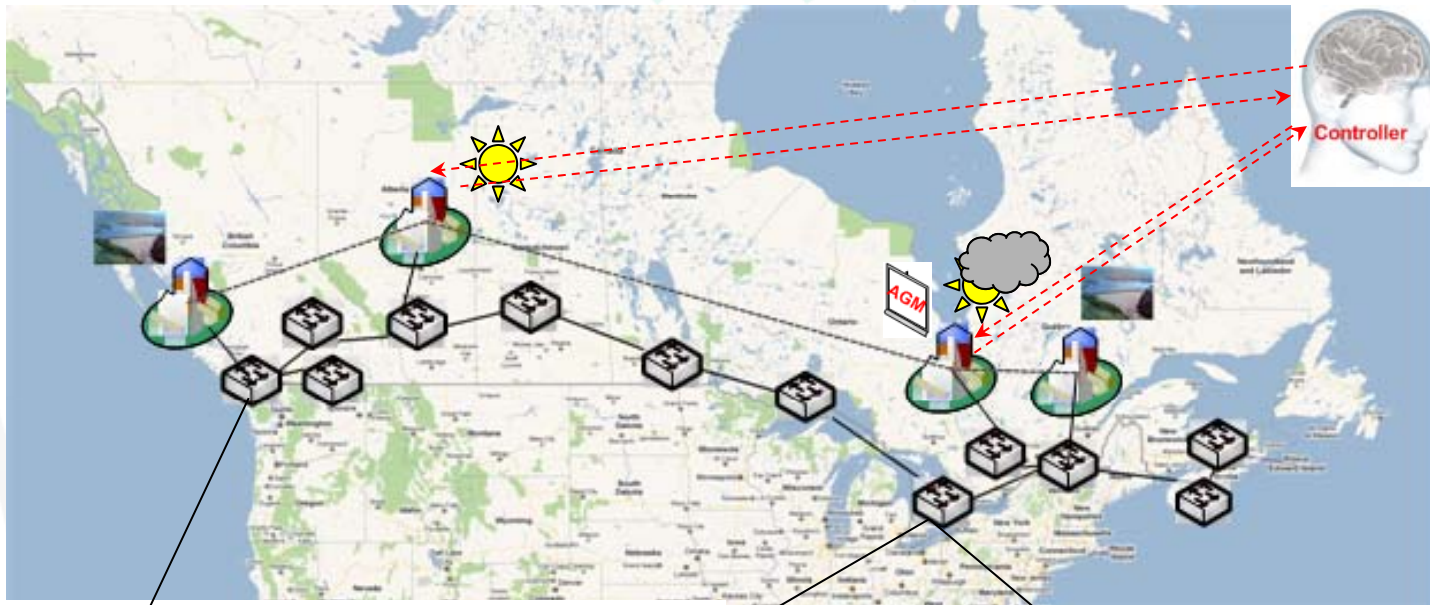
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The GreenStar Network

Transcoding and Video Streaming service provision based on Follow the Sun and the Wind



GV- CANARIE AGM Live demonstration



★ Simulation on global scale [Simulation.mp4](#)

Carbon Protocol

How Real Reductions will be Achieved

GHG Emission
reductions =

Green Powering application

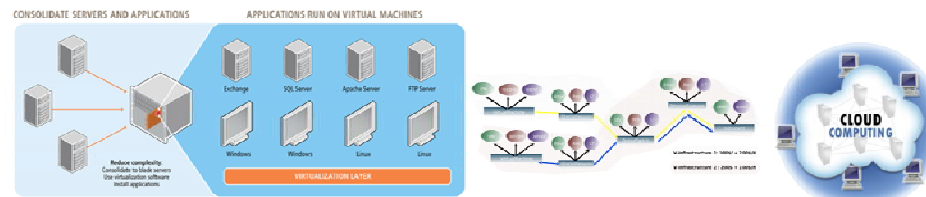
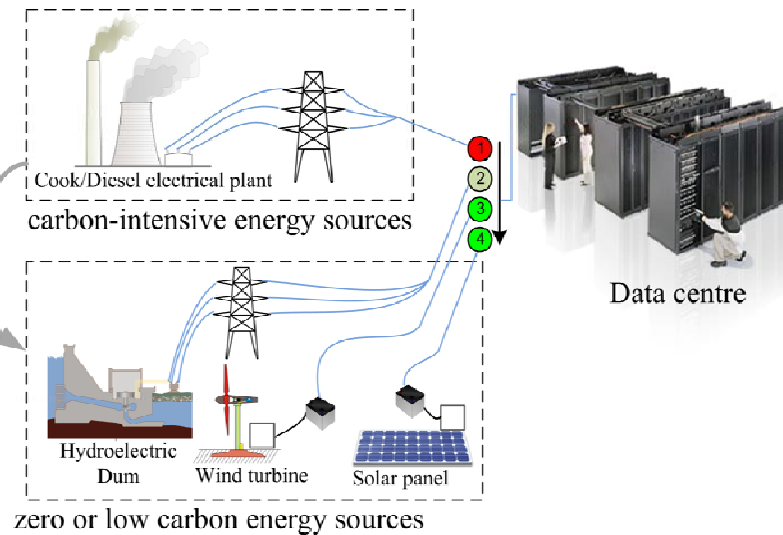
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Compute efficiency

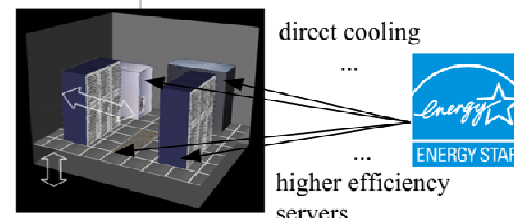
increase energy efficiency
per unit of computing
services delivered.

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Technological or process
improvements that increase
end-use efficiency



Server Consolidation, Infrastructure Virtualization and Cloud Computing



Data centre



Protocol-related Accomplishments

- Finished ISO 14064-2 based Protocol Draft in Preparation for TAG meeting (held in June 2011)
- Continuation with GHG Project report for GeoChronos Relocation
- Development of proposal for online documentation tool

Online Documentation Tool

- The online documentation and calculator will be able to be used for the following purposes:
 - For documenting low or zero carbon ICT projects and creating project reports that project proponents could try to third party verify
 - For the quantification and reporting of low or zero carbon ICT initiatives within corporate sustainability reports
- The tool will be based on the ICT GHG Reduction Project Protocol

The GreenStar Network Partners

☆ Academia



☆ Not-for-Profit Corporations



CYBERA



☆ Industry



iDeal inc.



ERICSSON



SIGMACO

☆ Government



☆ International Partners



USA



Belgium



Ireland



Spain



China





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Thank you!

<http://www.greenstarnetwork.com>

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