Prof. Subhasis Ghoshal
TISED Director

8 Feb 2017 Presentation to Senate Standing Committee on Energy, the Environment and Natural Resources

TISED

Trottier Institute for Sustainability in Engineering and Design

McGill Faculty of Engineering

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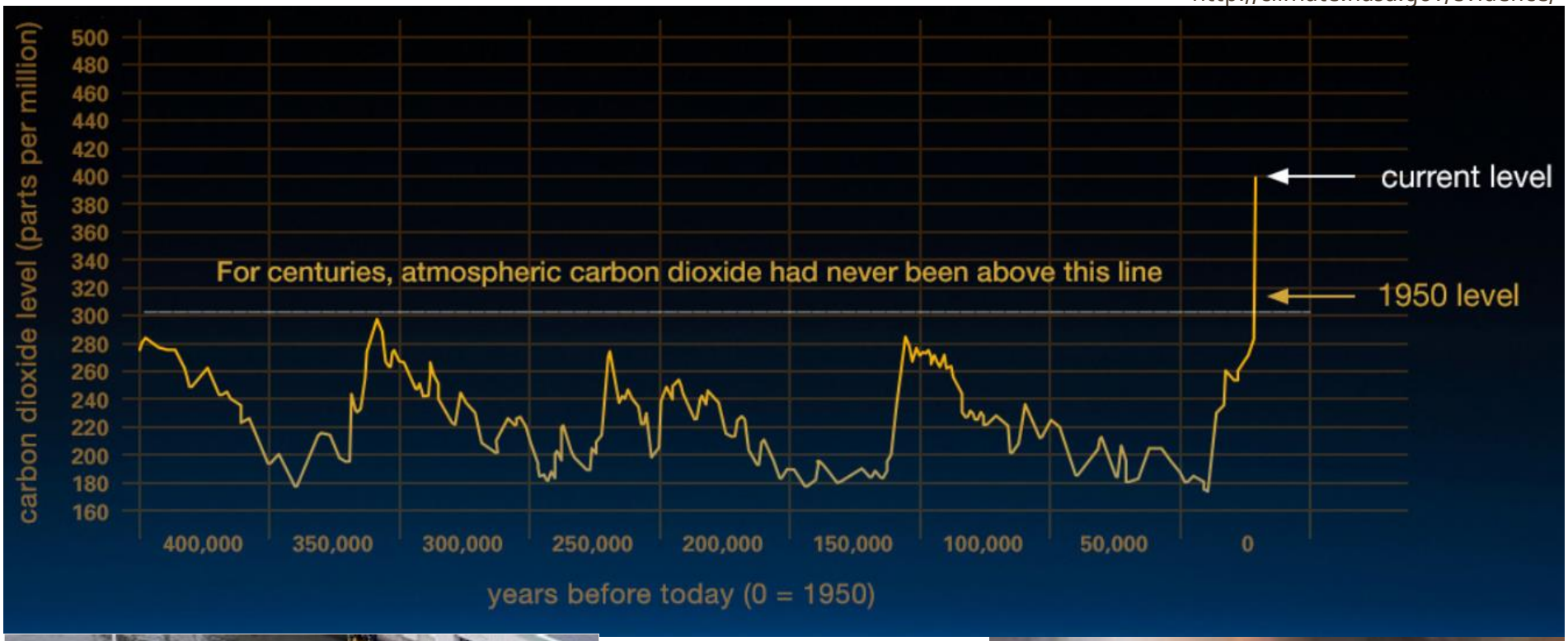
Climate Change → Adapt? Mitigate?

McGill Faculty of Engineering

http://climate.nasa.gov/evidence/



AP Images

LA Times

Wikipedia

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TISED

www.mcgill.ca/tised

Mission

The mission of TISED is to produce innovative engineering and design solutions and intellectual capacity that enables us to protect and nurture Earth and its' inhabitants to meet the needs of current and future generations.

Goals

- To **catalyze interdisciplinary and inter-institutional research** that provides solutions to local and global sustainability challenges.
- To **inform and advance policies** in support of governments, industry and other organizations, to advance development, particularly as relating to engineered and designed systems.
- To **educate current and future generations** of engineers, urban planners and architects to be leaders in sustainability in their professions.
- To **create and participate in forums for sustainability** by engaging the university community, decision-makers and the public in critical thinking and action.

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What we do

Educate

- Courses
  - Sustainable Design of Urban Communities
  - Energy Analysis
- Future Master's program
- Research awards, fellowships, student training

Catalyze research

- Research by members
- Scholar-in Residence
- Research Workshops Program
- Faculty Scholars
- Research Chair

Outreach to public and stakeholders

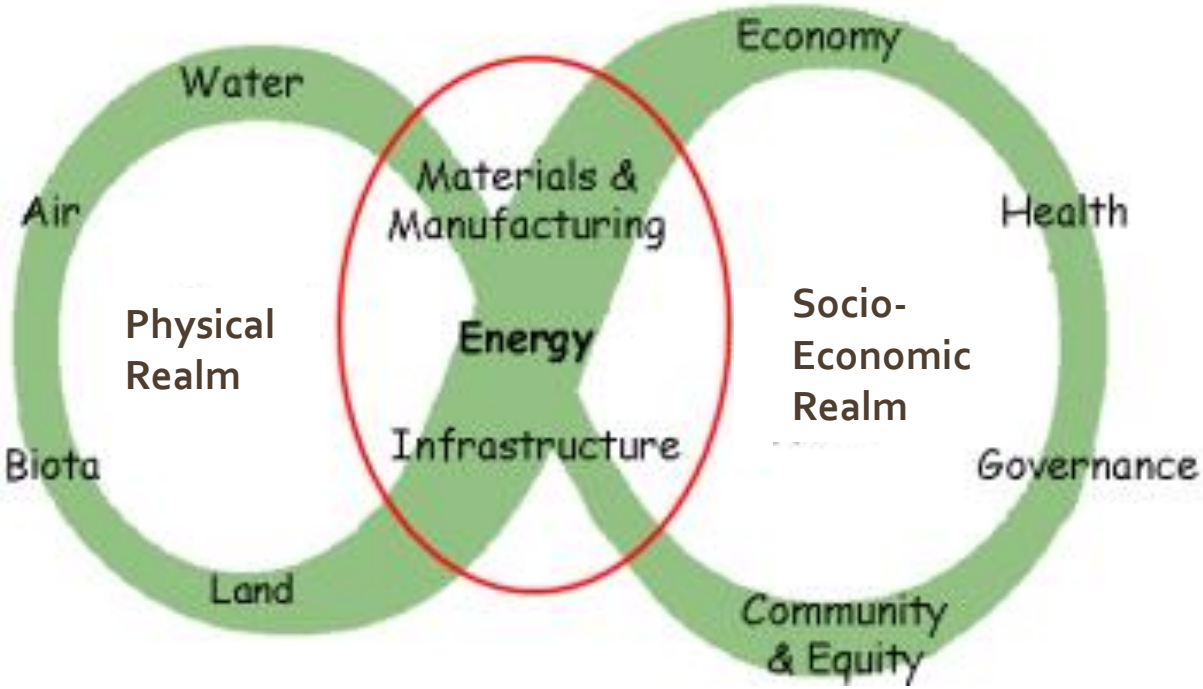
- Educational speaker events
- Online sustainable engineering and design info
- Social media networks

Inform public policy

- Stakeholder consultations
- Québec's Energy Future: A Policy Brief for Government

Themes

- Renewable Energy & Energy Efficiency
- Sustainable Infrastructure & Urban Development
- Sustainable Industrial Processes & Manufacturing



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Renewables: What holds us back? What moves us ahead?

Third Annual Trottier Symposium in Sustainable Engineering, Energy and Design

March 8th and 9th, 2016, 6:30PM-8:30PM

trottiersymposium.org

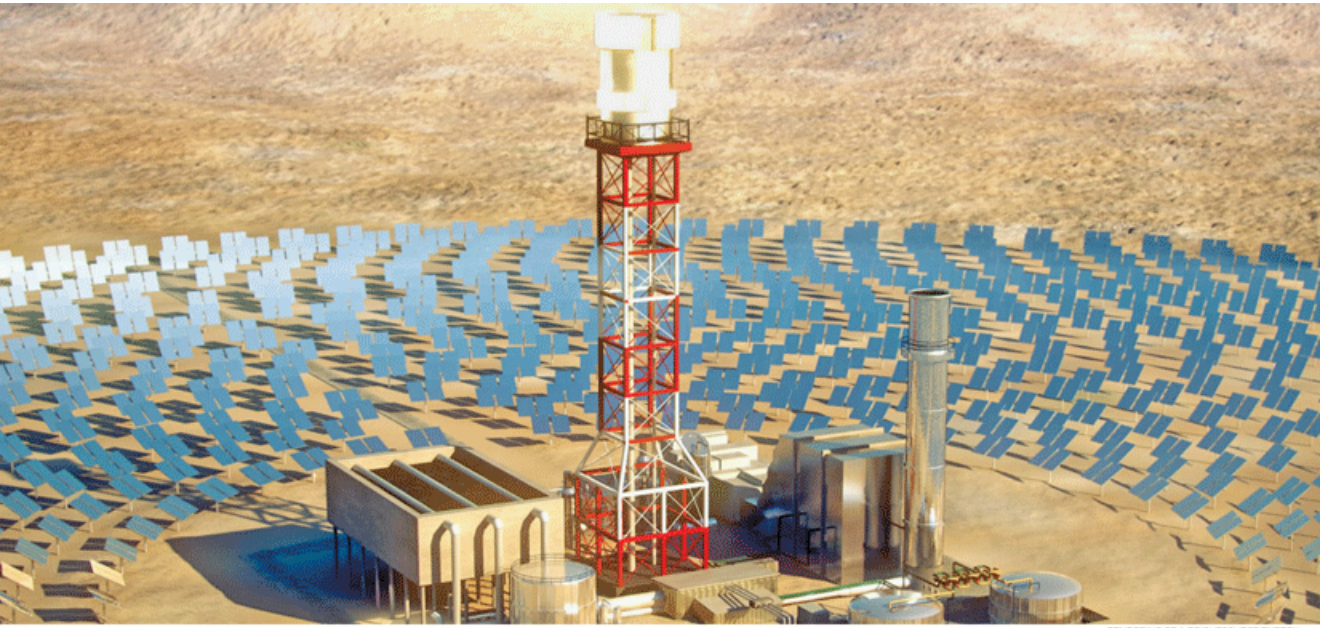
McGill Faculty of Engineering

TISED Trottier Institute for Sustainability in Engineering and Design

POLYTECHNIQUE MONTRÉAL

IET INSTITUT DE L'ÉNERGIE TROTTIER

Research Workshops Program



RENDERING OF A BRIGHTSOURCE ENERGY SOLAR THERMAL POWER TOWER PLANT. PHOTO COURTESY OF BRIGHTSOURCE ENERGY.

Storage in Sustainable Electric Energy Systems:

TECHNOLOGY PUSH AND POLICY PULL

Stockage dans les systèmes d'énergie électrique durables :

LA POUSSÉE TECHNOLOGIQUE ET L'INFLUENCE DES POLITIQUES

SPEAKERS / CONFÉRENCIERS

Daniel S. Kirschen
Close Professor of Electrical Engineering, Department of Electrical Engineering, University of Washington

Joseph H. Eto
Staff scientist, Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division

Michel Bernier
Professeur, Département du génie mécanique, École polytechnique de Montréal

6-8pm, Thursday November 20 2014
New Residence Hall, 3625 Avenue du Parc, Montreal

Christopher Ragan
Associate professor, Department of Economics, McGill University

Géza Joós
Professor and NSERC/ Hydro-Québec Industrial Research Chair in Distributed Generation, Department of Electrical and Computer Engineering, McGill University

Jeff Gostick
Assistant professor, Department of Chemical Engineering, Faculty of Engineering, McGill University

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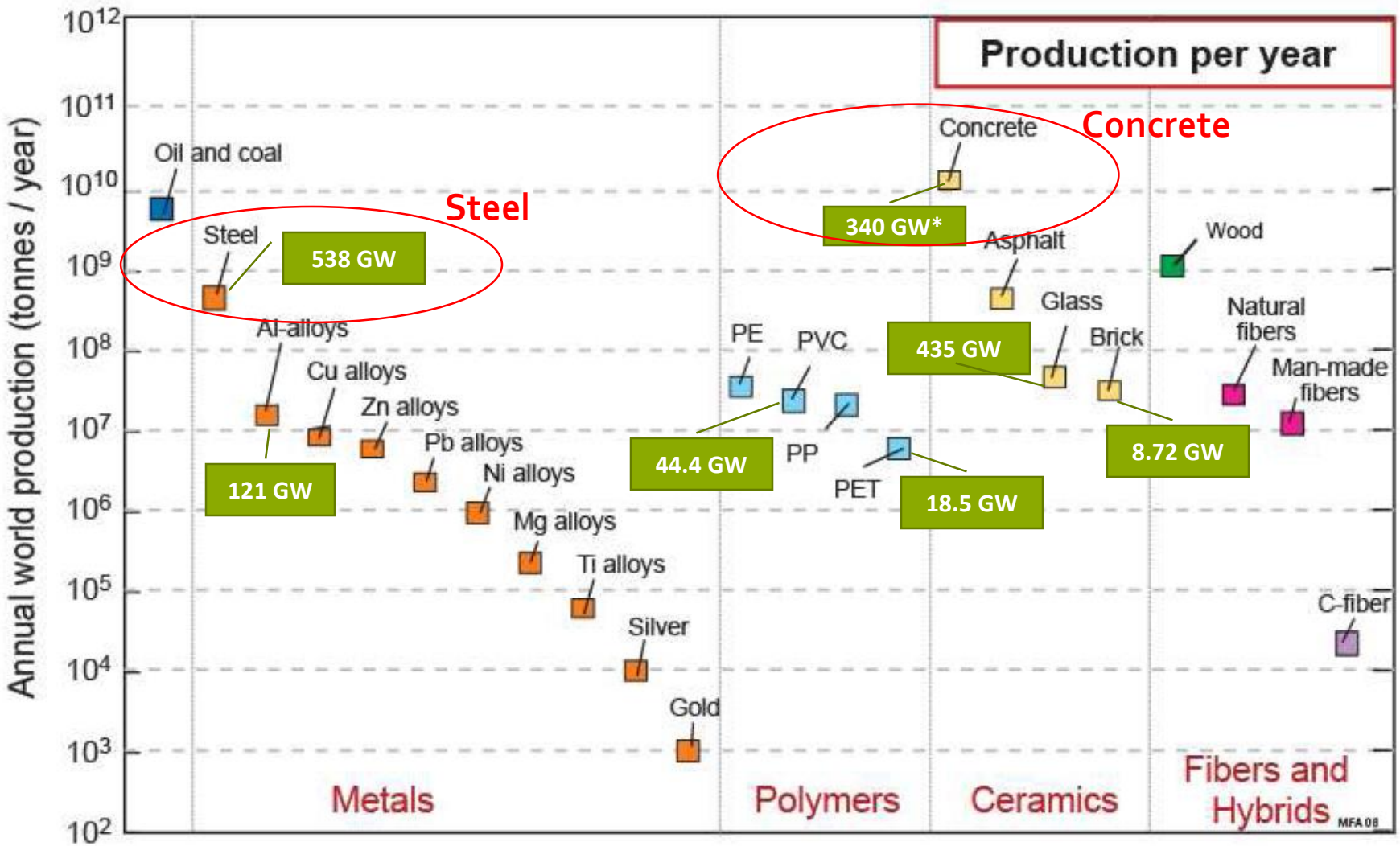
Resource Consumption for Material Production



Credit: Mike Ashby

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Iron Intensity for Transportation Options (180 persons)

Bicycle

15 kg Iron/capita

Walking

0 kg Iron/capita

Bus

10 Mg Iron/bus
170 kg Iron/capita

Personal Car

1 Mg Iron/car
670 kg Iron/capita

Credit: Tom Graedel

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