

The Helsinki Energy Challenge (HEC)

A scenic view of the Helsinki waterfront at sunset. The water is calm, reflecting the warm orange and yellow light of the setting sun. In the background, several modern buildings are visible, including a prominent one with a checkered facade. Several boats are docked along the pier.

ABSOLUTE ZERO: DEVELOPING A TORONTO SUBMISSION

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FIND OUT MORE: [HTTPS://ENERGYCHALLENGE.HEL.FI/](https://energychallenge.hel.fi/)

The Absolute Zero Bottom Line

*We are not telling you to keep talking about reaching “net zero emissions” or “carbon neutrality” by cheating and fiddling around with numbers..... Let’s be clear. We don’t need a “low carbon economy.” We don’t need to “lower emissions.” Our emissions have to stop if we are to have a chance to stay below the 1.5-degree target. And, until we have the technologies that at scale can put our emissions to minus, then we must forget about net zero. **We need real zero.***

Greta Thunberg, Davos Switzerland, January 21, 2020



Background To City's Engagement

- The design challenge is an effective way to deal with large, complex societal issues
- Represents a significant economic opportunity for companies in Toronto
- Presents a unique opportunity to identify new ideas/opportunities that Toronto could adopt in its Climate Change plan
- Toronto's consortium could take advantage of this opportunity to include trade visits to other cities while attending the design meetings in Helsinki when we win
- Opportunity to showcase Toronto-based technologies and solutions for climate change to a global audience, leading to a competitive edge in selling their service



Value Proposition

- **Research & Development:** We are leading the drive and investing in zero-emission solutions (uncovering the solutions of tomorrow)
- **Market Transformation:** We are changing and shifting both the local and international market by supporting new technologies and business models
- **Educate & Advocate:** We showcase/promote/knowledge share with the international community
- **Catalyst and convener** for the creation and development of Toronto-based innovative solutions for climate change and the commercialization of these solutions
- **International exposure and reputation enhancement** for local industry and the City as a global leader on climate
- **The start of a Toronto Cleantech Cluster (?):** Development of local sector leadership and the building of a strong supply chain and cluster connections locally which allows Toronto firms to be more effective in competing internationally
- **Adoption of the solutions offered to Helsinki in Toronto**

The Toronto Consortium

- Consisting of up to 30 members representing Toronto industry, academia and government – including Ryerson University, University of Toronto, Enwave Energy and Noventa Energy
- Approximately half will be determined by an open call to the industry and stakeholders.
OPEN CALL IS ON NOW
- Open to all sizes of companies but you must be able to scale your solutions quickly
- Open to all companies and partners in Canada but must be able to attend in person meetings in Toronto (subject to change)
- The submission will be developed during one-day design charrette and subsequent follow-up discussions between members



Key evaluation criteria



**Climate
impact**

Cost impact

**Resource
impact**

**Reliability &
security of supply**

Capacity

**Implementation
schedule & feasibility**

Toronto Absolute Zero

The Helsinki Energy Challenge is a timely opportunity to demonstrate the Toronto region's international leadership in sustainable and resilient infrastructure that promotes a global transition towards a low carbon economy.



Some Early Thoughts on Prime Directives for Toronto Absolute Zero



Reduce demand for energy

Re-use existing infrastructure

Recycle energy between buildings

Combined heat and power is most efficient – so need to address electrical supply and consumption issues too

Renewable zero carbon only

Energy storage

Toronto Absolute Zero Charette

- One-day Charette to draft a bid proposal
- Conceptual, appropriate but realistic
- Bold and innovative

The Vision	The Plan	The Team
<ul style="list-style-type: none">• Absolute Zero• Cleantech• Finnish Innovation and Partners• Global Partnerships	<ul style="list-style-type: none">• System Concept• Technology Platforms• Cost Benefit Analysis	<ul style="list-style-type: none">• Industry• Academia• Government• Utilities• NGOs

The above content will be converted into a bid document and digital presentation

Cost and Support

- The budget for the design process and to develop a highly competitive submission is \$75,000
- The City is providing \$25,000 (\$15,000 from Economic Development & Culture and \$10,000 from the Environment and Energy Division)
- The City has reached out to the federal government, federal agencies, the provincial government and local agencies like TF to secure commitments for financial support
- All participants on the team are expected to support the cost of the initiative. Noventa Energy has pledged \$10,000



Next Steps and Timelines

- The COVID-19 Pandemic has disrupted everyone's schedules and priorities
- But this is such a positive initiative – both for climate change solutions and creating economic opportunities that the partners are committed to carrying this forward
- Options to doing collaboration and design thinking are being considered
- There will be more webinars like this for the team members to participate in and these will be announced soon
- If the HES timelines get changed then the deadline to submit your application to be part of Team Toronto will be extended to

Deadline to submit your expression of interest is Friday, March 27

Toronto Can Be A Winner



Resources

Absolute Zero Toronto webpage

<https://cotsurvey.chkmkt.com/AbsolutZeroTeamToronto>

Form to submit to be considered for the Team is here

Resource List of Innovation Solutions to Thermal Energy Needs

<https://torontogreenindustries.home.blog/2020/03/02/resource-list-on-zero-carbon-solutions-for-community-thermal-energy-needs/>

Sign up to the Toronto Green Industries News to be kept up-to-date on Team Toronto and other Cleantech sector Toronto based initiatives

<https://torontogreenindustries.home.blog/about/>