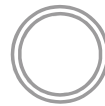




# net-zero

ENERGY HOME COALITION



FEBRUARY 2013



# About the NZEH Coalition

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- Not-for-profit founded in 2004 and federally incorporated in 2006.
- **Purpose:** To accelerate the market development of affordable net-zero energy homes.
- **Vision:** All new home construction meeting a net-zero energy standard by 2030.

*New homes meeting a net-zero energy ready standard by 2020 will set the stage and prove out the practicality and viability for our 2030 Vision.*

# Board of Directors

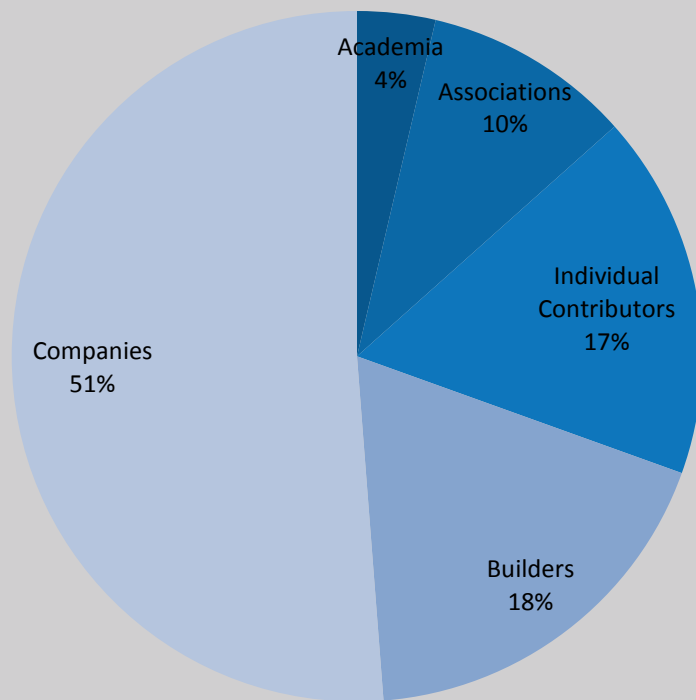
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Board Member	Position	Representative Organization	Location
Gary Hamer	President	BC Hydro	Burnaby, BC
Simon Knight	Past President	C3	Calgary, AB
Cory Krygier	Vice President	Jigsaw Homes	Calgary, AB
Frank Baker	Secretary/Treasurer	Plasti-Fab Ltd.	<a href="#">Blissfield, MI</a>
Bob Armstrong	Director	BASF Canada Inc.	Mississauga, ON
Ann V. Edminster	Director	Design AVEnues LLC	<a href="#">Pacifica, CA</a>
David Johnston	Director	What's Working Inc.	<a href="#">Boulder, CO</a>
Paul Locke	Director	DuPont Canada Inc.	Mississauga, ON
Gordon Shields	Director	Past Executive Director	Nepean, ON
Sam Rashkin	Ex-Officio Director	US DOE	<a href="#">Washington, DC</a>
Peter Amerongen	Ex-Officio Director	Habitat Studio & Workshop	Edmonton, AB
Michael McLaughlin	Ex-Officio Director	ROXUL	Milton, ON

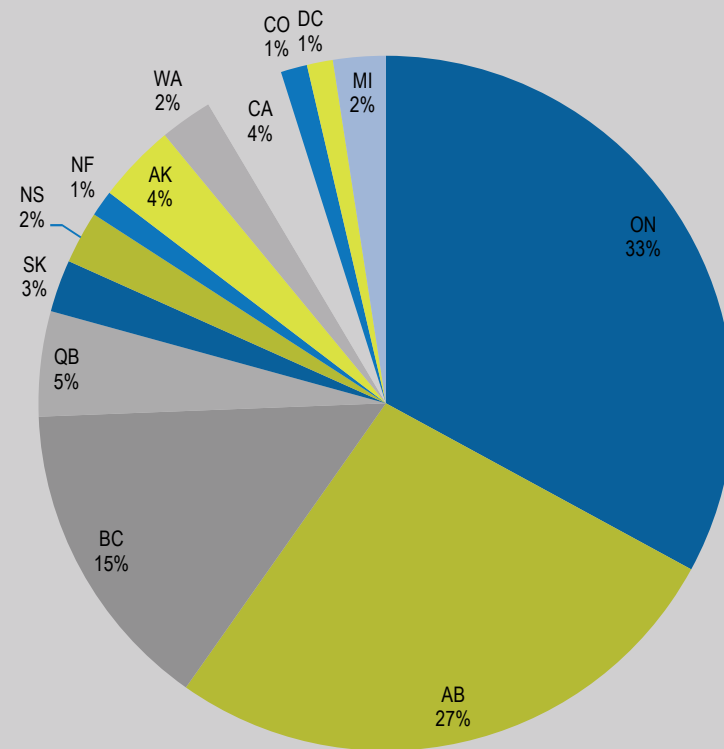
# Membership

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## Members By Type



## Members by Province/State



Complete membership directory and Google map at [netzeroenergyhome.ca/member-directory](http://netzeroenergyhome.ca/member-directory)

# Outlook & Opportunities

5/18

- **Membership:** 228% growth in last 2 years – upward trend
- **Custom and tract builders offer NZE:** see our twitter newsfeed
- **Website:** 6,530 unique visits/month 160,755 hits/month average
- **NZEH Industry Implementation Plan:** Published March 2011
- **Definitions & Performance Metrics Project:** Published March 2012
- **Webinars:** Monthly informational and networking
- **Oct 2013 Event:** Conference, Awards and Leadership Summit

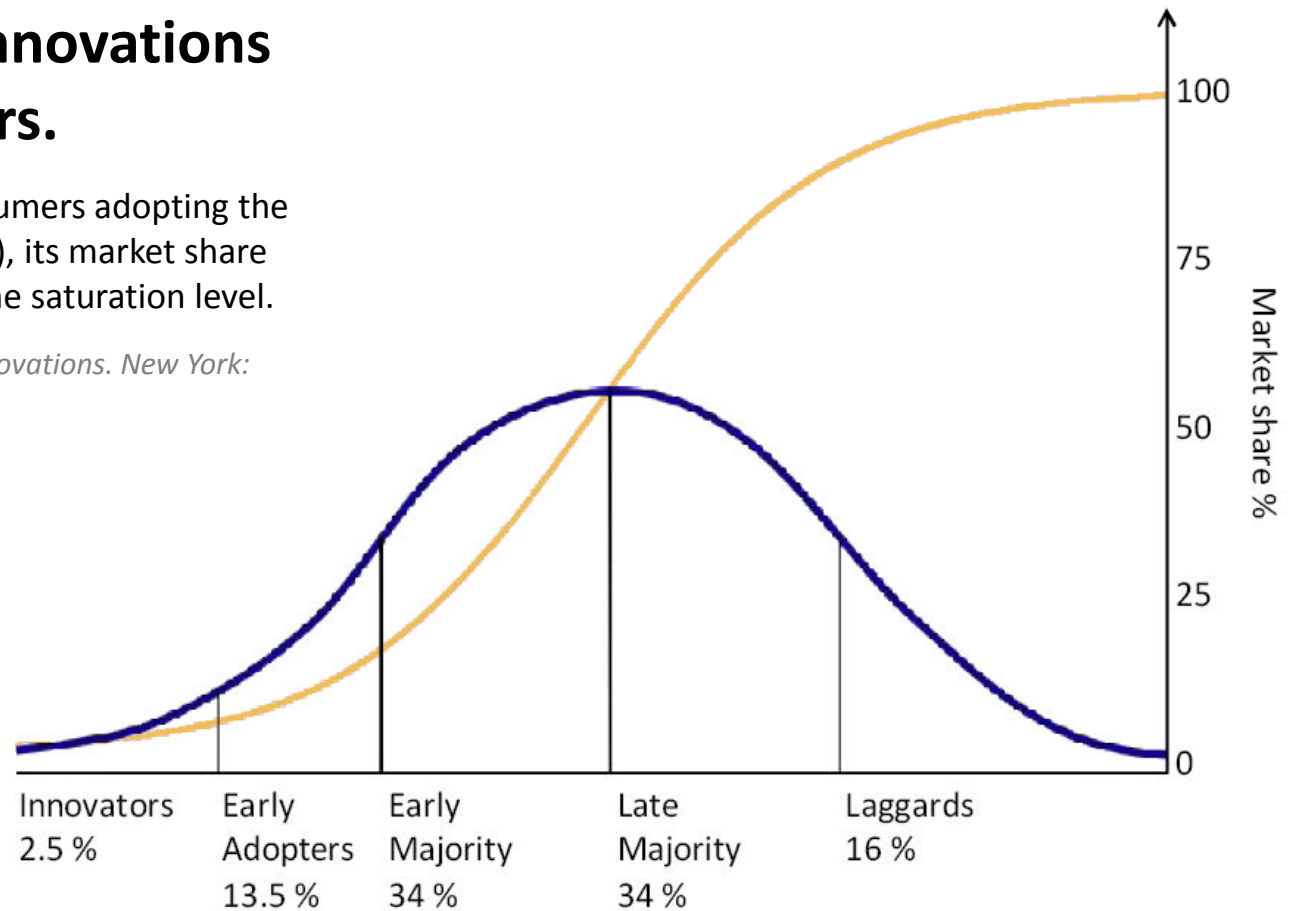
# Outlook & Opportunities

6/18

## The Diffusion of Innovations according to Rogers.

With successive groups of consumers adopting the new technology (shown in blue), its market share (yellow) will eventually reach the saturation level.

*Rogers, E. M. (1962). Diffusion of Innovations. New York: Free Press.*



# Outlook & Opportunities

7/18

## Pike Research Report ([www.pikeresearch.com/research/zero-energy-buildings](http://www.pikeresearch.com/research/zero-energy-buildings))

- Zero energy buildings has emerged as **next major frontier... gold standard... holy grail.**
- The industry is poised to undergo **a significant transformation over the next decade** as stringent regulations come online around the world that **accelerate adoption.**
- Many countries and regions have established **long-term targets and regulations that will require zero energy building construction** – some as soon as 2016.
- Codes will drive **significant investment in zero energy building technologies over the next few decades.**
- **A market is already emerging for zero energy buildings today,** but it remains a small fraction of the overall building construction industry.
- **Revenue From Net Zero Energy Buildings to Reach \$1.3 Trillion by 2035.**
- Report provides data on size & growth of market for ZEB markets from 2011 to 2035.

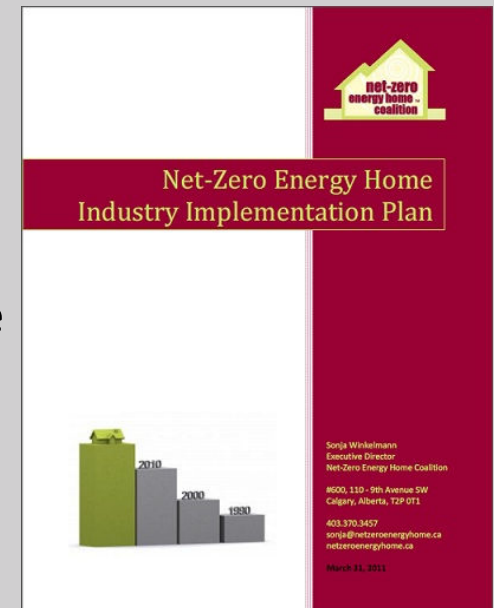
# Industry Implementation Plan

8/18

There are many players that are part of building a Net-Zero Energy Home (NZEH). In order to ensure that more NZEHs are built, all stakeholders must be engaged.

The NZEH Coalition's approach is to work with those who are already leading the way and making it happen, as well as those who have the desire and willingness to try. Call them the early adopters or the industry leaders... either way, they're out in front leading the way for others to follow. And they deserve recognition for their success, support for their efforts, and help to make their jobs easier. That's where the NZEH Industry Implementation Plan comes in.

[netzeroenergyhome.ca/industry-implementation-plan-iip](http://netzeroenergyhome.ca/industry-implementation-plan-iip)  
[netzeroenergyhome.ca/iip-activity-task-forces](http://netzeroenergyhome.ca/iip-activity-task-forces)





# Industry Implementation Plan

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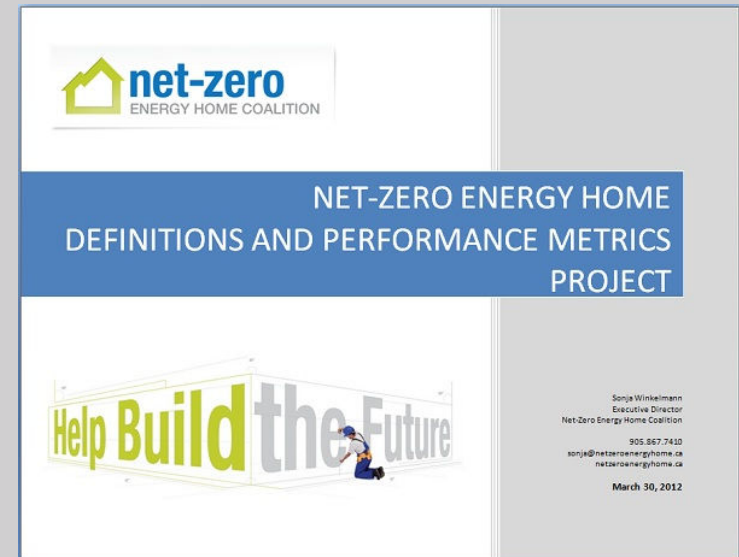
	Technical Standards & Quality Assurance	Technical Support Tools	Training & Capacity	Marketing & Promotion	Financing
Immediate Activities	1.1 Develop an industry endorsed net-zero ready (NZR) and net-zero energy home (NZEH) definition with quantifiable performance metrics.			8.2 Undertake a modest marketing effort with key partners targeting early adopter consumers to support members.  <i>(8.1 Consolidate existing baseline consumer market research to support the development of 8.2.)</i>	
Short-Term Activities	4.1 Work with partners currently undertaking NZEH R&D for next-generation building envelope and integrated renewable energy systems to establish testing protocols, performance optimization, and durability standards.	5.1 Work with NRCan to validate HOT3000 for NZEH capacity, assessing strengths and limitations of the software. (Can HOT3000 be used as an integrated home and renewable energy design and analysis software tool?)  3.1 Define the components/approach to the Integrated Design Process, develop tools to support implementation of integrated design methods, and measure, verify and update analysis methods.	5.2 Broaden industry (builders and designers) modelling and simulation software/tool capacity through existing infrastructure to accurately determine energy impacts of low-energy homes (load reduction/energy efficiency) and renewable energy production strategies and systems.  3.2 Create builder and designer expertise by employing an Integrated Design Process for the optimization of performance and minimization of costs.	8.3 Develop methodologies and tools for home builders to educate buyers and stimulate demand so NZEHs have a clear market preference with consumers.	4.2 Develop business cases and tools (i.e. Group Buying Program) to incorporate new technologies and services to support deployment of next-generation products and systems (through demonstration and trials) for widespread adoption of low-cost, high-performance building envelope systems that drastically reduce home heating loads.  6.1 Develop business cases for packaged energy efficient, renewable energy based systems that are cost effective to install and operate, and are widely available and adopted.
		2.1 Ensure current NZEH performance monitoring, verification & assessment tools are evaluated, gaps are identified, and additional tools are developed by working with partners currently undertaking this R&D.	7.1 Work with partners to develop and provide formal and informal NZEH training and related materials for primary and secondary industry stakeholders	8.4 Capture and disseminate NZEH best practices for all to use.  2.2 Coordinate collaborative performance data gathering and monitor, document and disseminate performance and cost information.	9.2 Examine, develop and implement short to medium-term partnerships and financial solutions (i.e. incentives) to accelerate the demand for NZEHs.
Medium-Term Activities	2.3 Develop a NZR & NZEH certification program to validate performance.  <i>(1.2 Undertake a market study of the technical standards of existing labelling and certification programs to determine what aspects of the various programs provide the most meaning and value in support of the development of 2.3.)</i>	6.2 Work with partners currently undertaking NZEH R&D for next-generation building envelope and integrated renewable energy systems to identify cost-reducing technologies through third-party simulation, testing and demonstration.	7.3 Develop and provide information and materials related to the operation and maintenance of NZEHs for homeowners.		9.1 Work with partners to develop new and innovative financial frameworks and business models so costs and benefits of NZEHs are considered and distributed across impacted stakeholders.
			7.2 Perform an industry capacity labour market info survey.	8.2 Undertake a general marketing campaign.	

# Definitions and Performance Metrics

10/18

This report identifies definitions for both net-zero energy (NZE) and net-zero energy ready (NZER) homes as well as performance metrics recommendations as derived from input from the project committee and industry survey.

Additionally, the project outcomes section includes recommendations on verification methods, optimization tools, and how the deep energy retrofit industry might also be included in these efforts. The results of the market research survey questions are also in this section.



[netzeroenergyhome.ca/definitions-project](http://netzeroenergyhome.ca/definitions-project)

# Definitions and Performance Metrics

11/18

## Net Zero Energy (NZE)

A net-zero energy home is one that is designed, modelled and constructed to produce as much energy as it consumes on an annual basis.

## Net Zero Energy Ready (NZE<sup>R</sup>)

A net-zero energy ready home is one that is designed, modelled and constructed to produce as much energy as it consumes on an annual basis *but has not yet installed the onsite renewable energy generation system(s)*.

# Webinars

12/18

- **14 held in 2012** See [netzeroenergyhome.ca/2012](http://netzeroenergyhome.ca/2012) for slides
- **2013 to-date** [netzeroenergyhome.ca/2013](http://netzeroenergyhome.ca/2013)
  - Jan 10: WUFI Passive: The Next Gen Modeling Tool for Passive Buildings in North America**  
Katrin Klingenberg, Co-Founder and Executive Director, Passive House Institute US (PHIUS)
  - Feb 12: Selling High Performance Homes - The Realtors Role**  
Panel moderated by Chris Chopik, Managing Director, Evolution Green
  - Mar 21: Benefits of Stonewool Insulation in Low Energy Buildings**  
Rockford Boyer, North American Manager, Energy Design Centre, ROXUL Inc., and  
Dan Giansante, North American Marketing Manager, ROXUL Inc.
  - Apr 16 : Net Zero by 2030: A Progress Report - Alberta Builders Perspective**  
Panel moderated by Simon Knight, President & CEO, C3
  - Jun 18 : Effect of building shape and neighborhood design on solar potential and energy performance**  
Presented by Caroline Hachem, Postdoctoral fellow, Dept. of Building, Civil and Env Eng, Concordia University
- **Free for NZEH Coalition members, \$25 each for non-members**

# 2013 Conference, Awards & Leadership Summit

13/18

- Aligned with the US DOE [Solar Decathlon](#), in Irvine California, the 2<sup>nd</sup> week of October [solardecathlon.gov](http://solardecathlon.gov)
- Pillars: [Big Picture/Movement-Building](#), [Education](#) (with an emphasis on best practices/case studies) and [Networking](#)
- Tracks: [Technical](#) Solutions, [Business](#) Solutions & [Policy](#) Solutions
- Unite a diverse group of [thought leaders](#), practitioners and early adopters of ZNE in North America, around [solutions and actions to drive market transformation and mass adoption](#)
- COLLECTIVE IMPACT!

# Research & Development

14/18

- International Energy Agency (IEA), Solar Heating & Cooling Programme (SHC), Task 40 – Net Zero Energy Solar Buildings Oct 2008 – Sep 2013 [task40.iea-shc.org](http://task40.iea-shc.org)
- NSERC **Smart Net-zero Energy Buildings strategic Research Network (SNEBRN) 2011-2016** [solarbuildings.ca](http://solarbuildings.ca)
- Natural Resources Canada (NRCan), CanmetENERGY, Buildings & Communities, Housing [canmetenergy.nrcan.gc.ca/buildings-communities/housing/685](http://canmetenergy.nrcan.gc.ca/buildings-communities/housing/685)
- US Department of Energy (DOE), Energy Efficiency and Renewable Energy, Building Technologies Program, Building America [eere.energy.gov/buildings/residential/ba\\_index.html](http://eere.energy.gov/buildings/residential/ba_index.html)
- Building Science Corporation [buildingscience.com](http://buildingscience.com)

# Deployment & Programs

15/18

- **NRCan R-2000 Net-Zero Energy Pilot** will be launched in 2013
- **DOE Challenge Home Program** [eere.energy.gov/buildings/residential/ch\\_index.html](http://eere.energy.gov/buildings/residential/ch_index.html)
- **Passive House: CanPHI, PHIUS, PHAUS, etc.**
- **Living Building Challenge Net Zero Energy Certification** [ilbi.org/lbc/netzero](http://ilbi.org/lbc/netzero)
- **Earth Advantage Net Zero** [earthadvantage.org/programs/homes/earth-advantage-zero/](http://earthadvantage.org/programs/homes/earth-advantage-zero/)
- **NESEA Zero Net Energy Homes Training** [nesea.cammpus.com/courses/zero-net-energy-homes—online](http://nesea.cammpus.com/courses/zero-net-energy-homes—online)
- **Find Zero Energy Home Builders** [zerohomes.org/find-energy-home-builders/](http://zerohomes.org/find-energy-home-builders/)
- **Green Building Advisor** [greenbuildingadvisor.com](http://greenbuildingadvisor.com)

# Stay Current - Get the Latest News

16/18

- **Follow our news feed on Twitter** <https://twitter.com/NZEHCoalition>
- **Read our weekly e-paper** <http://paper.li/NZEHCoalition/1311746418>
- **Sign up for our e-bulletins** <http://www.netzeroenergyhome.ca/sign-up-for-our-bulletins>
- **Join our upcoming webinars** <http://www.netzeroenergyhome.ca/webinars>
- **Attend our 2013 Summit** link to be announced



# Sponsors

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# Call to Action

18/18

## Let's make a difference. Together.

To become a part of this effort or receive more info

### Call us: 905.867.7410

Sonja Winkelmann | Executive Director  
Net-Zero Energy Home Coalition | [netzeroenergyhome.ca](http://netzeroenergyhome.ca)  
905.867.7410 | [sonja@netzeroenergyhome.ca](mailto:sonja@netzeroenergyhome.ca)