

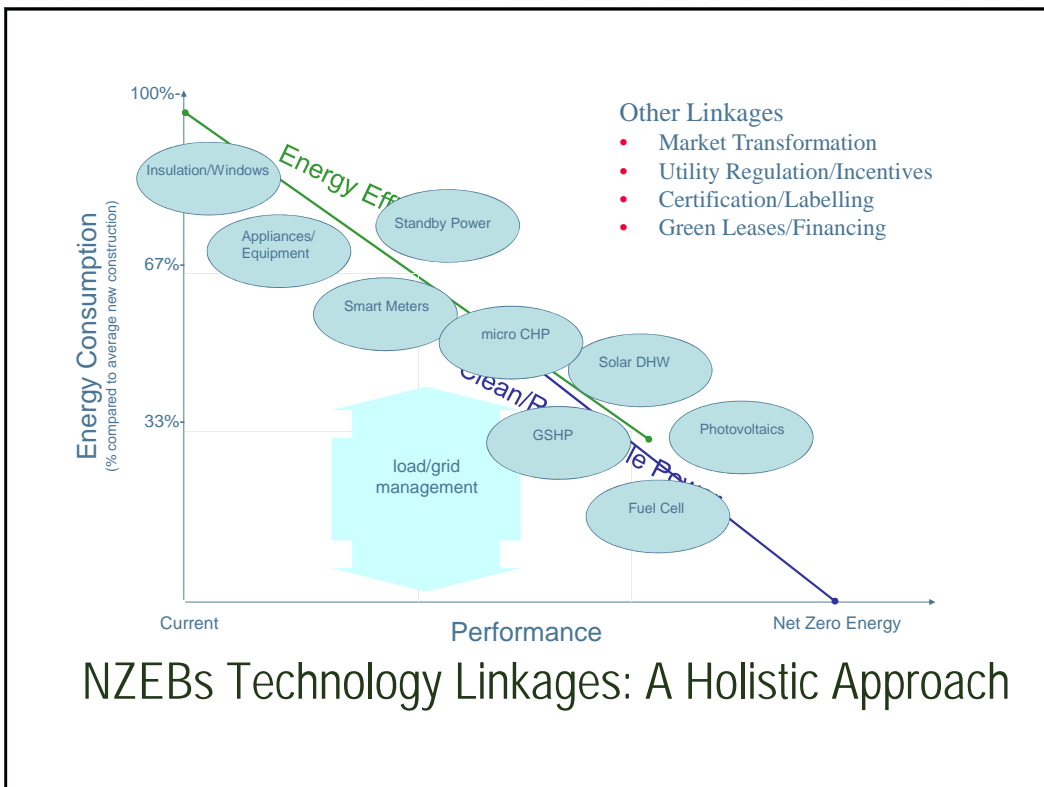


A **technology roadmap** is:

- a **plan** that matches short-term and long-term goals with specific technology solutions to help meet those goals.
- applies to a new product or process, or to an emerging technology
 - It helps reach a consensus about a set of needs and the technologies required to satisfy those needs;
 - it provides a mechanism to help forecast technology developments and
 - it provides a framework to help plan and coordinate technology developments.

ROADMAP STEPS

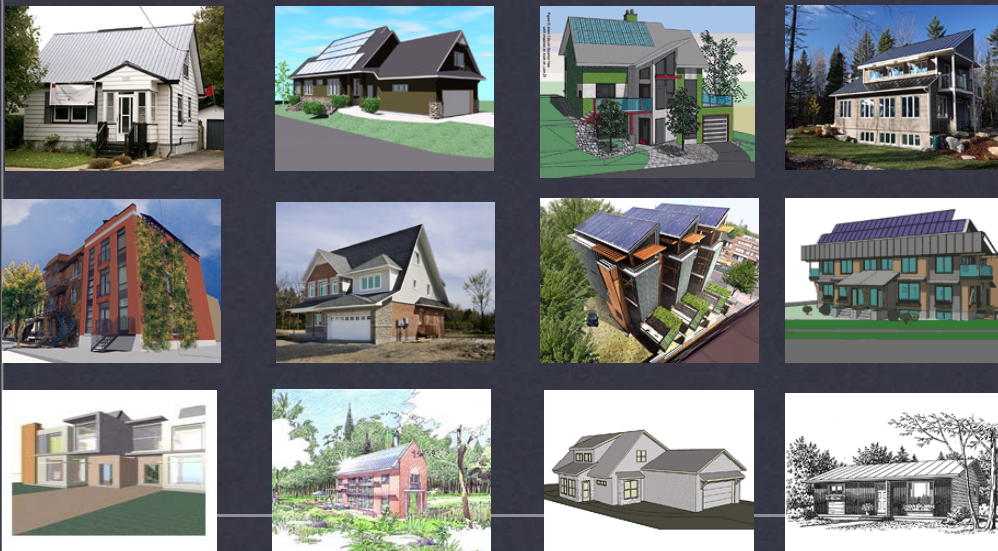
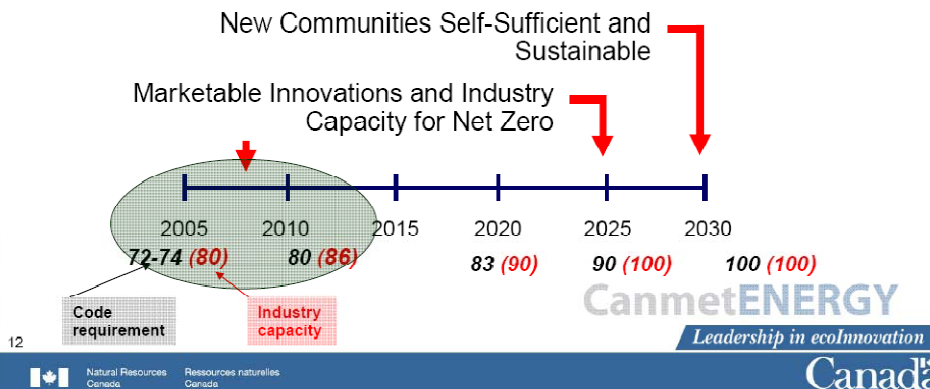
1. Educate
2. Demonstrate
3. Enable (financial)
4. Technical – research, standards, support
5. Legislate



Definition

Path to Net-Zero ...

❖ A home that produces as much energy as it uses on an annual basis (**All energy used in a home**, including that for heating, hot water, ventilation, air conditioning and all miscellaneous electrical consumption)

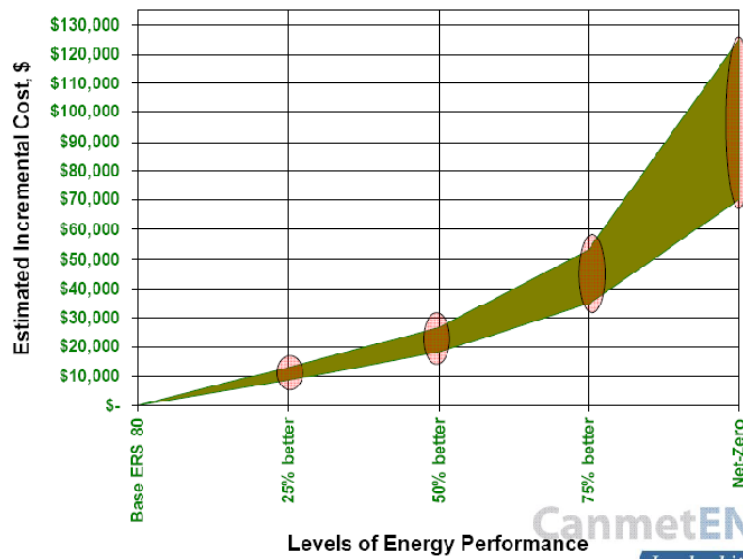


ONE-OFF DEMONSTRATION PROJECTS
Are Well Documented

COMMON ATTRIBUTES OF Net-Zero Energy Projects

- Air tight construction
- Well-insulated
- Fenestration and Passive Solar
- Mechanical whole-house ventilation
- Energy efficient heat, cooling and hot water equipment
- Energy efficient appliances
- Appropriate renewable energy

Incremental Cost Profile



CanmetENERGY

Leadership in ecoInnovation

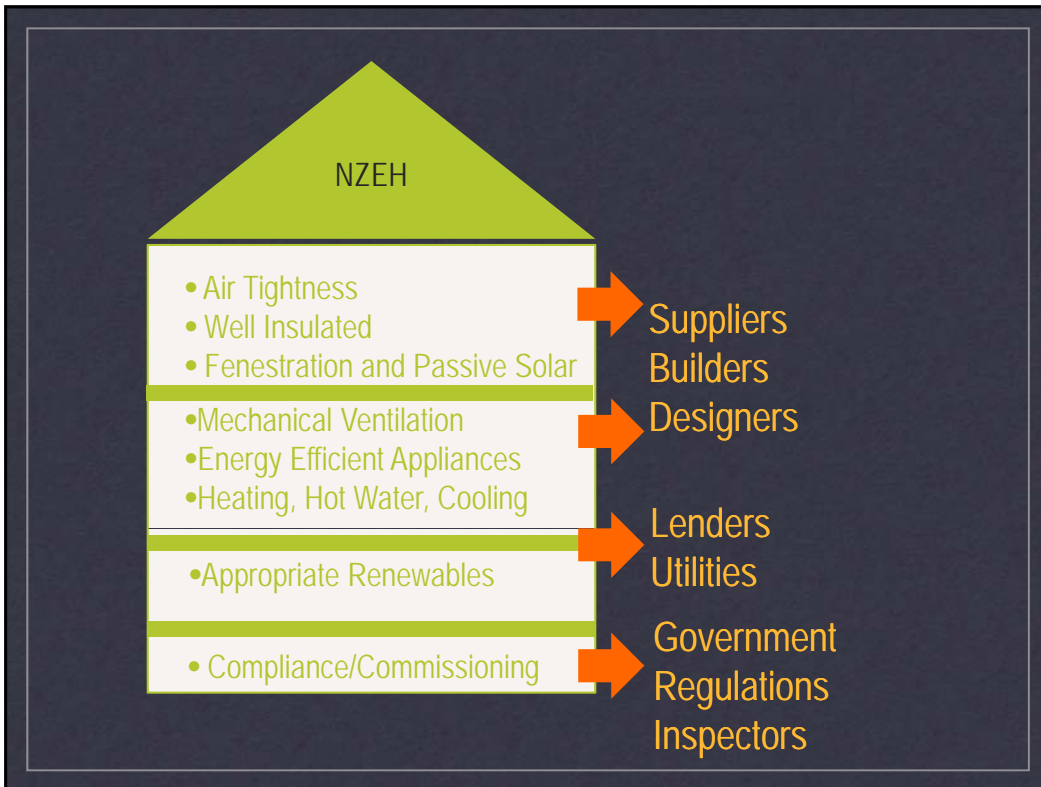
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Natural Resources
Canada

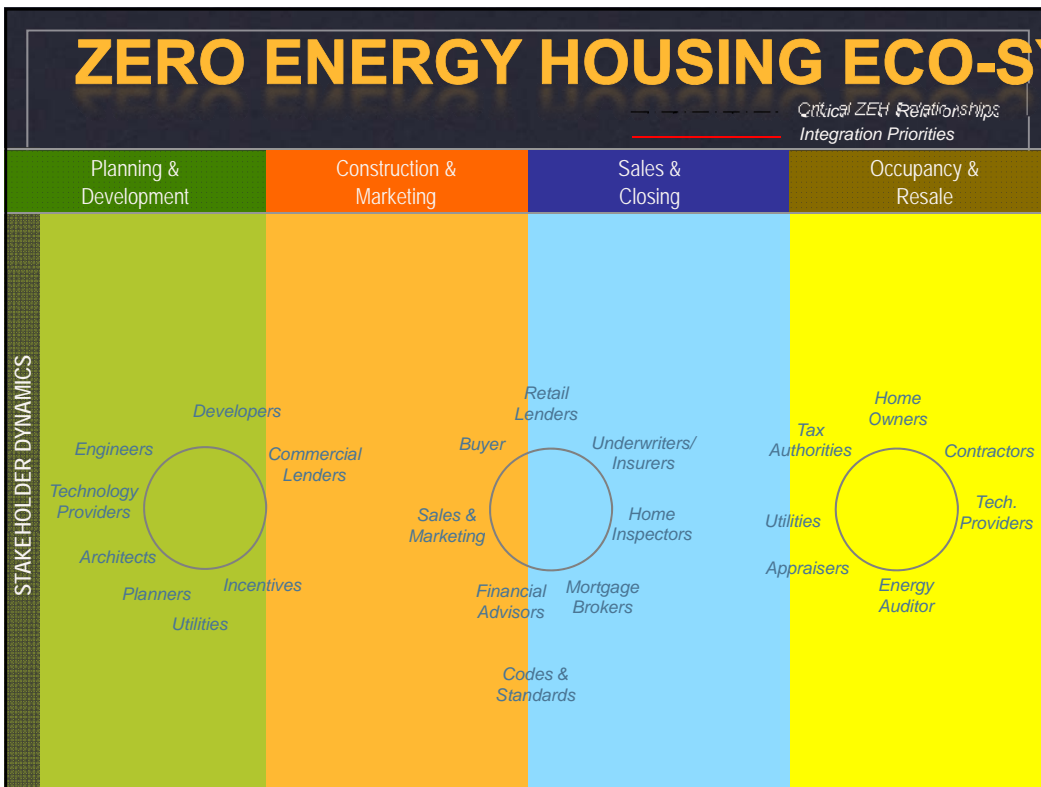
Ressources naturelles
Canada

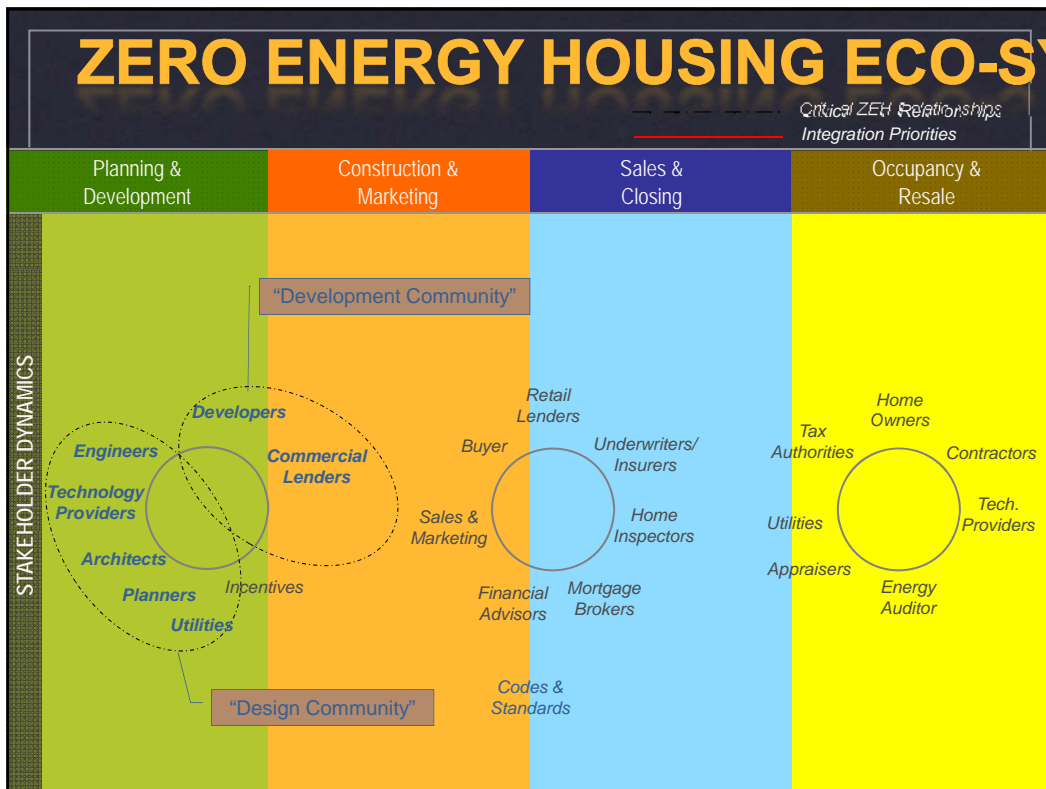
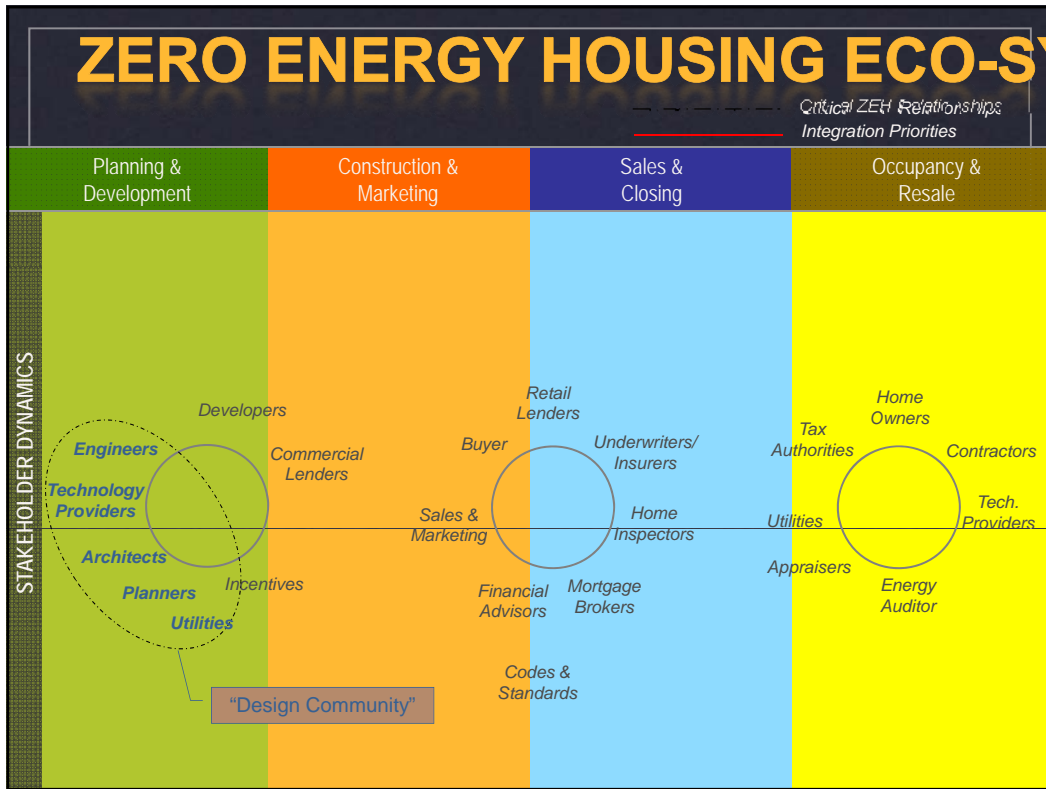
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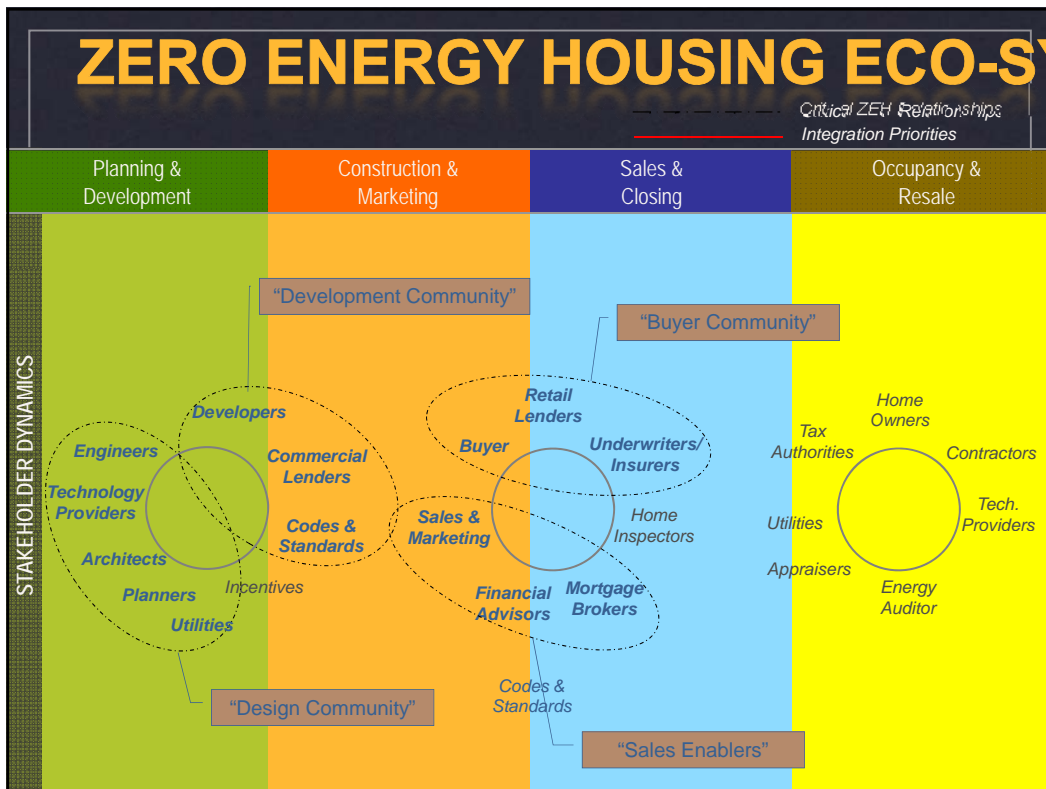
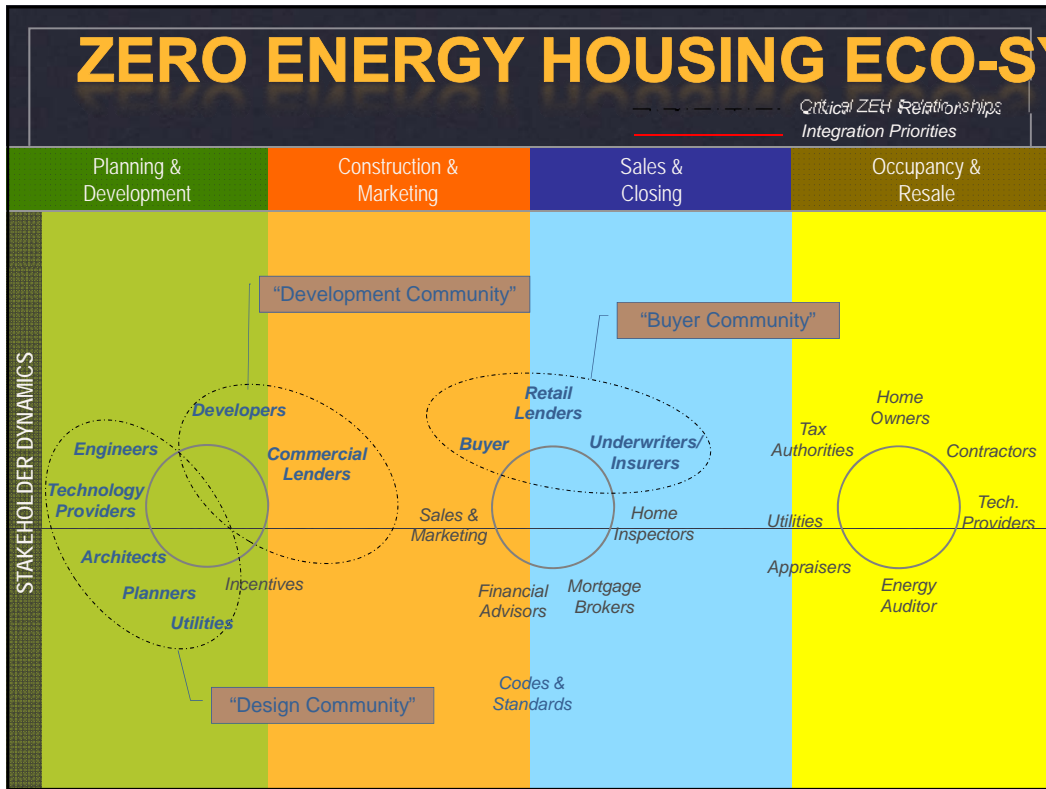


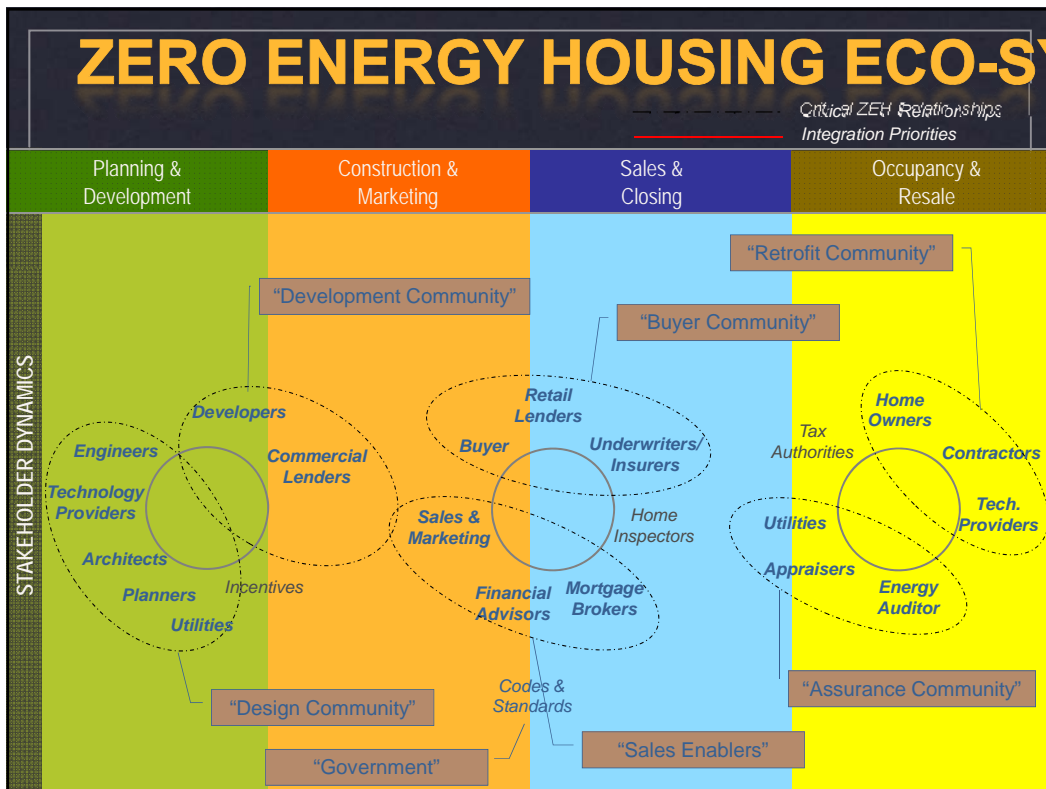
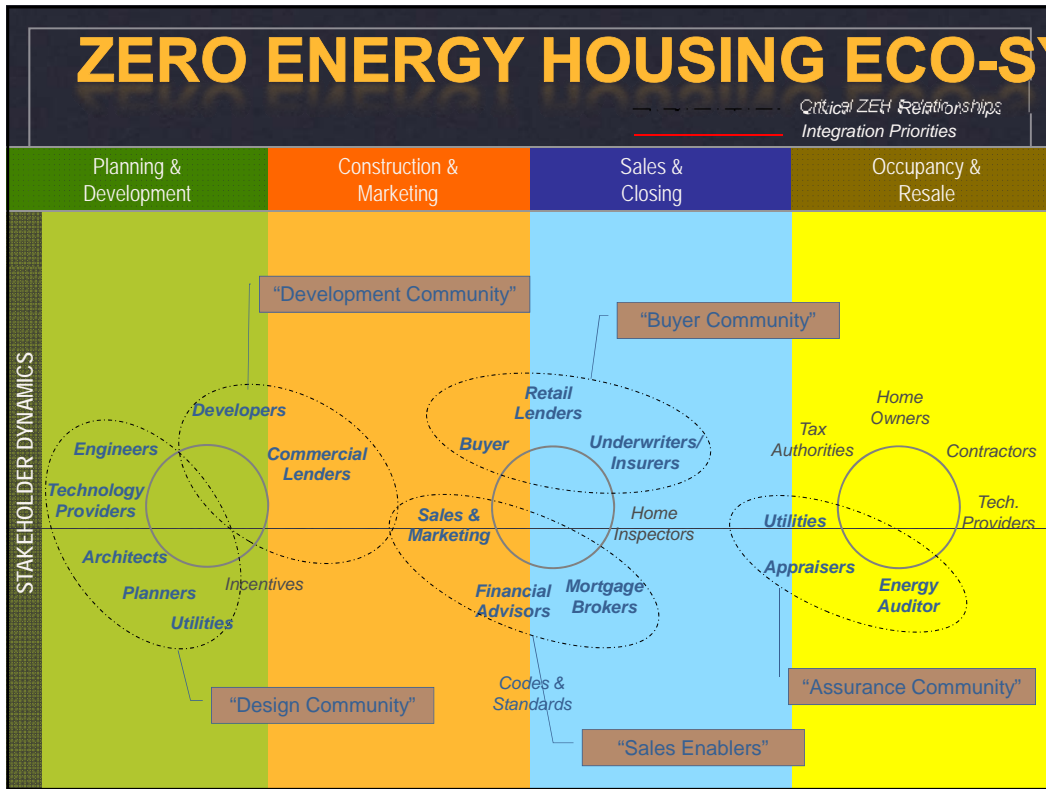
Suppliers	Builders and Designers	Financial Community
<ul style="list-style-type: none"> • key to cost reductions • large network for messaging • resource for training • specification certainty facilitates cost efficiencies • large multinationals critical to driving costs down 	<ul style="list-style-type: none"> • trades and sales training • testing/compliance infrastructure • embrace/encourage universal metrics among builders • Simple design/decision making tools for optimal solution sets 	<ul style="list-style-type: none"> • credible and robust performance metrics – verifiable, accurate • reliable/predictable cash flow • eliminate risk • huge opportunity for innovative green mortgage/loan instruments

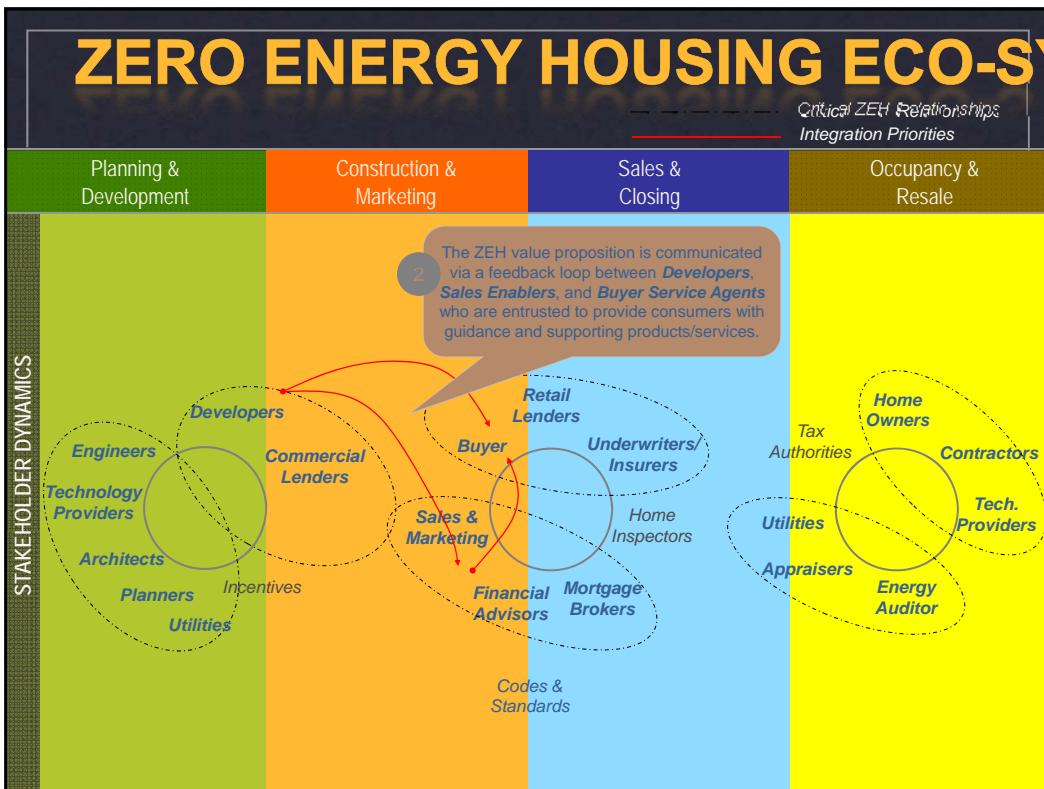
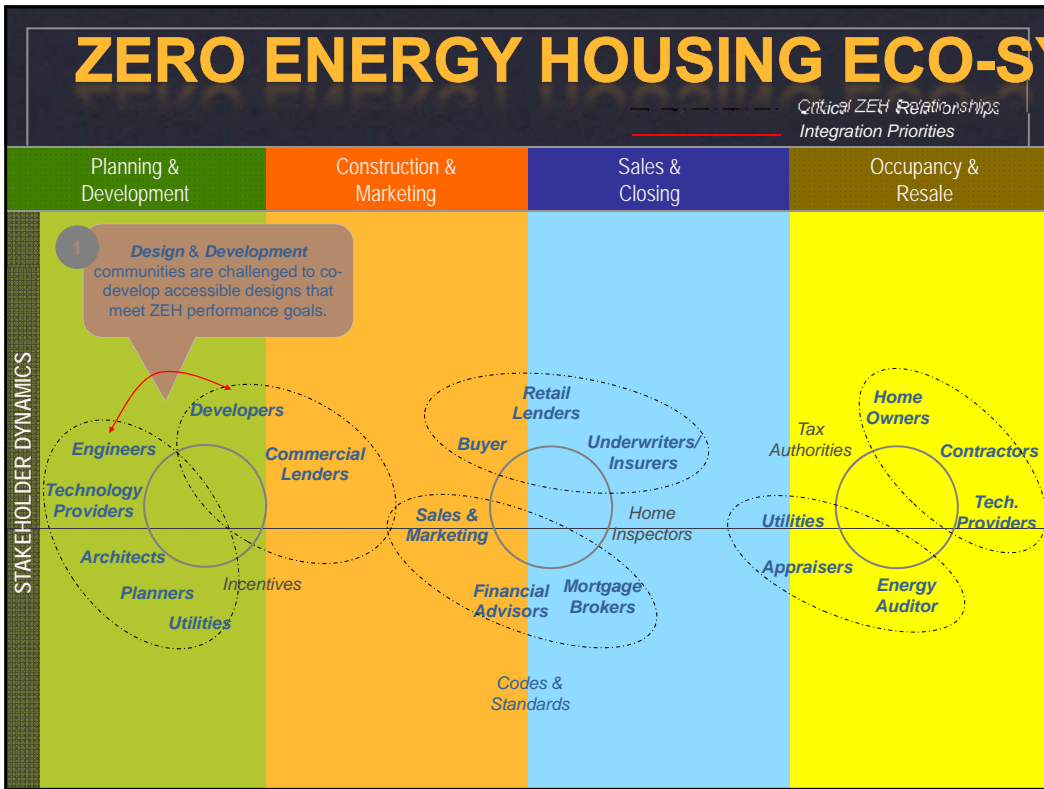
Utility and Energy Providers	Government	Financial Community
<ul style="list-style-type: none"> Fully incorporate externalities into energy supply systems Feed-in tariffs to reduce life cycle costs of renewable systems 	<ul style="list-style-type: none"> Regulations Financial Incentives Voluntary Standards Labelling 	<ul style="list-style-type: none"> Education Performance Feedback Simplicity Maintenance
<ul style="list-style-type: none"> Smart meters – time of use consumer information units Education 	<ul style="list-style-type: none"> Demonstrations Education 	<ul style="list-style-type: none"> Warranties Moral Imperative Innovative Financing

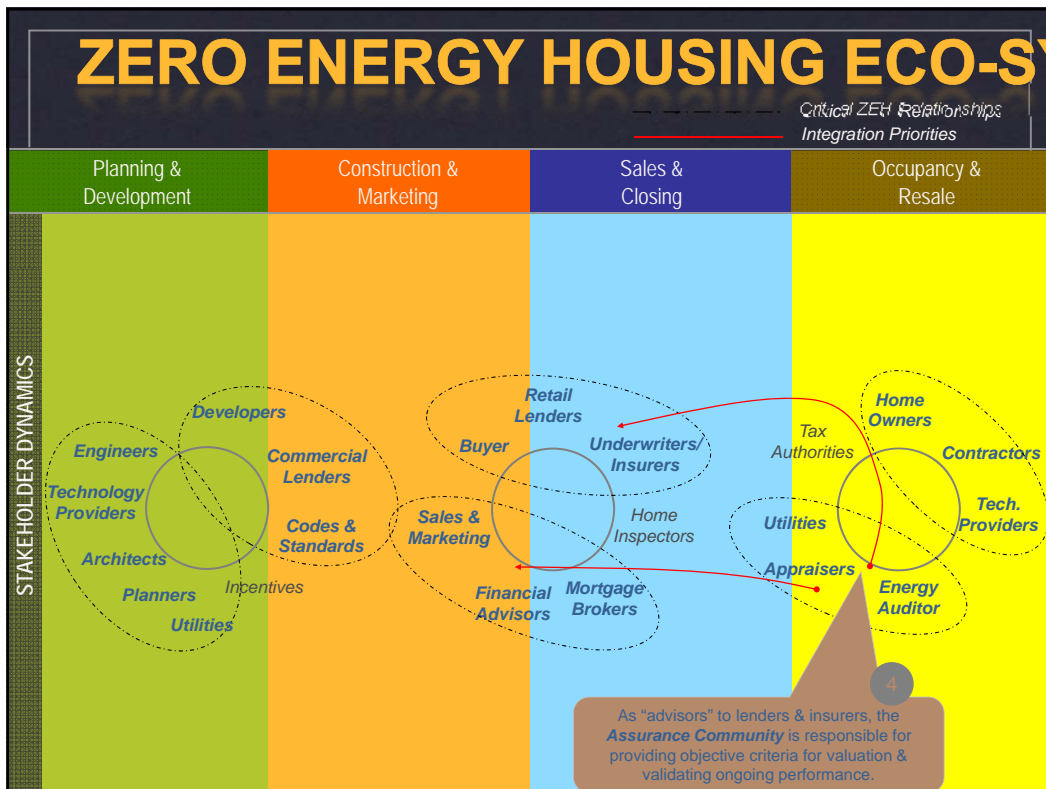
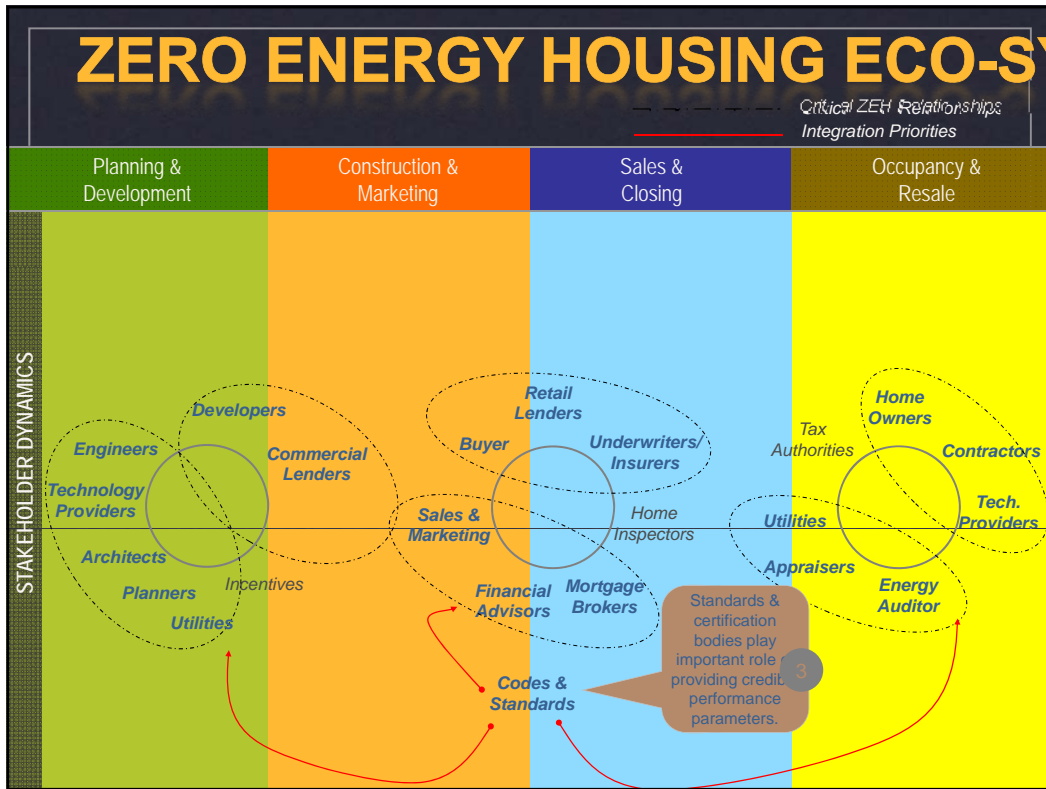


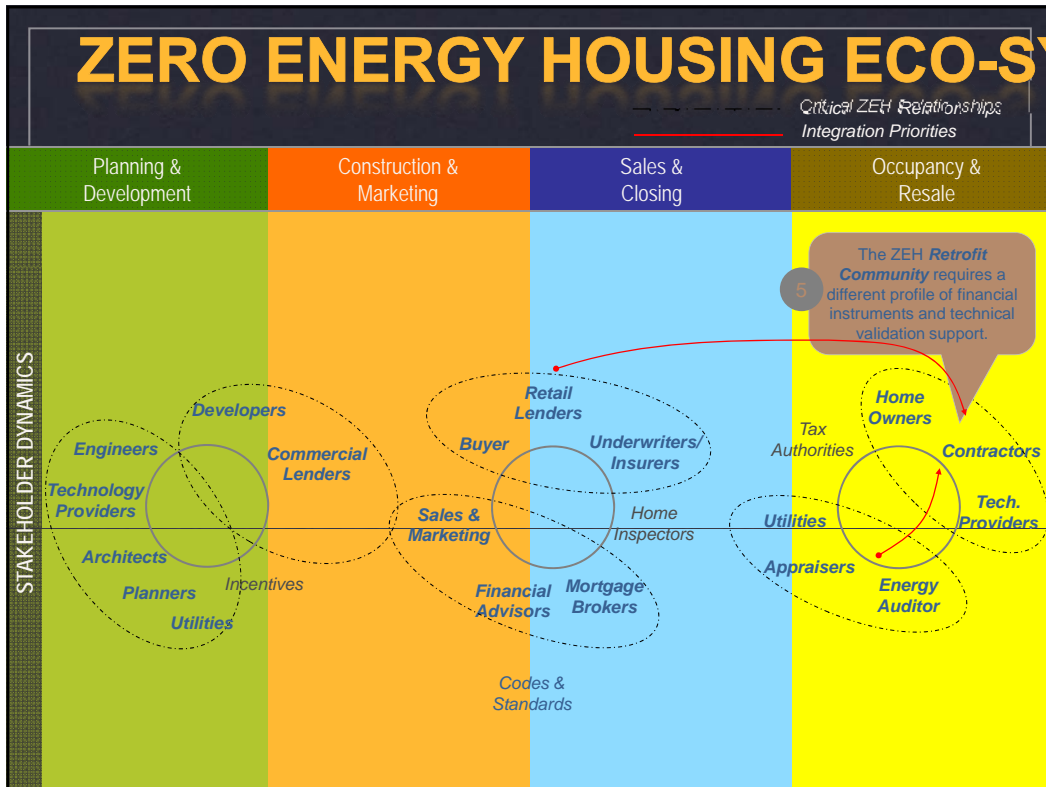












Conclusion

- Transforming the market place requires a multi stakeholder engagement process
- Education and evidenced based decision making is critical to creating confidence in the marketplace
- Public agencies play a critical role in creating certainty in the market place through public policy
- Builders, suppliers and utilities are the cornerstone to executing ZEH
- Financial institutions are key enablers but demand a low risk/no risk environment within which to operate