

Why not crank the AC?

“It’s a sustainable community so I can use the AC as much as I want.”

Why not crank the AC?

“IT’S SOLAR POWERED.”

SUNSHINE IS CLEAN & PURE

“When it’s a lovely day and a lot of electricity is generated by the PV generation system, I don’t feel ashamed of using more electricity than usual.”

ENERGY = SUNSHINE

“Using solar instead of consuming energy is a good idea.”

SUNSHINE = INDEPENDENCE

SELF-RELIANCE

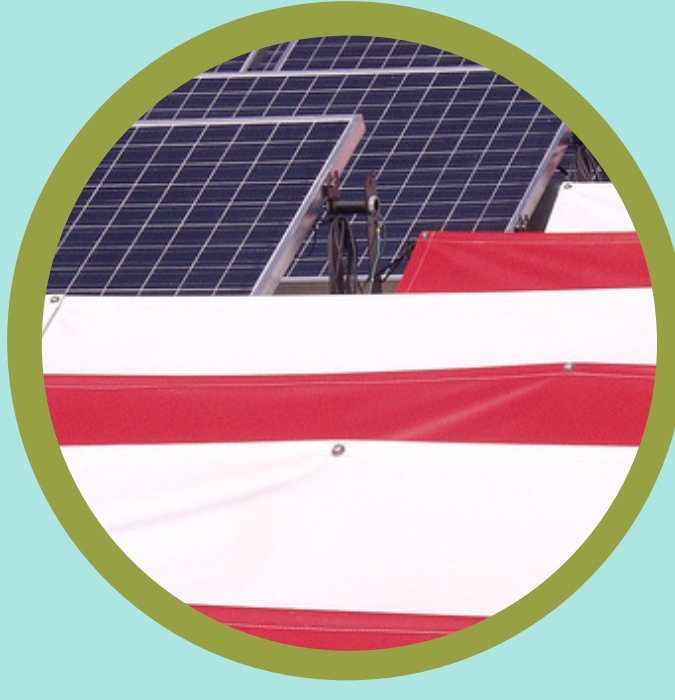
ZNE home as a silo of sustainability

AUTONOMY

Modern-day, off-the-grid, Walden Pond

SOVEREIGNTY

Political independence from oil producers



QUOTATION SOURCES

From multi-cultural research studies

Anonymous E-Sogo residents. “Alternative Cooling Strategies at E-Sogo ZNE Community.” Personal interviews by Sarah Outcault. Yokohama, Japan. 22-25 September 2014.

Barriga, C., Heinemeier, K., Biscotti, D. and L. Flynn. “Energy Saving Actions in West Village ZNE Community.” Survey. Survey Monkey. WCEC, UC Davis. March-April 2012. Web. 13 Oct. 2015.

Outcault, S. “Sustainable City, Dubai – Thermal Comfort Survey.” Survey. Qualtrics. WCEC, UC Davis, 28 August 2015. Web. 15 Oct. 2015.

Outcault, S. Kutzleb, J., Heinemeier, K. and C. Hammer. “Passive Cooling at West Village ZNE Community.” Survey. Qualtrics. WCEC, UC Davis, 4 August 2014. Web. 13 Oct. 2015.

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Learn more about our research:

wcec.ucdavis.edu

ZERO NET ENERGY HOMES PANACEA OR PERVERSE INCENTIVE?

Three mental models contributing to the "Rebound Effect"



SOLAR IS CLEAN

ZNE homes utilize a renewable resource with no downside.

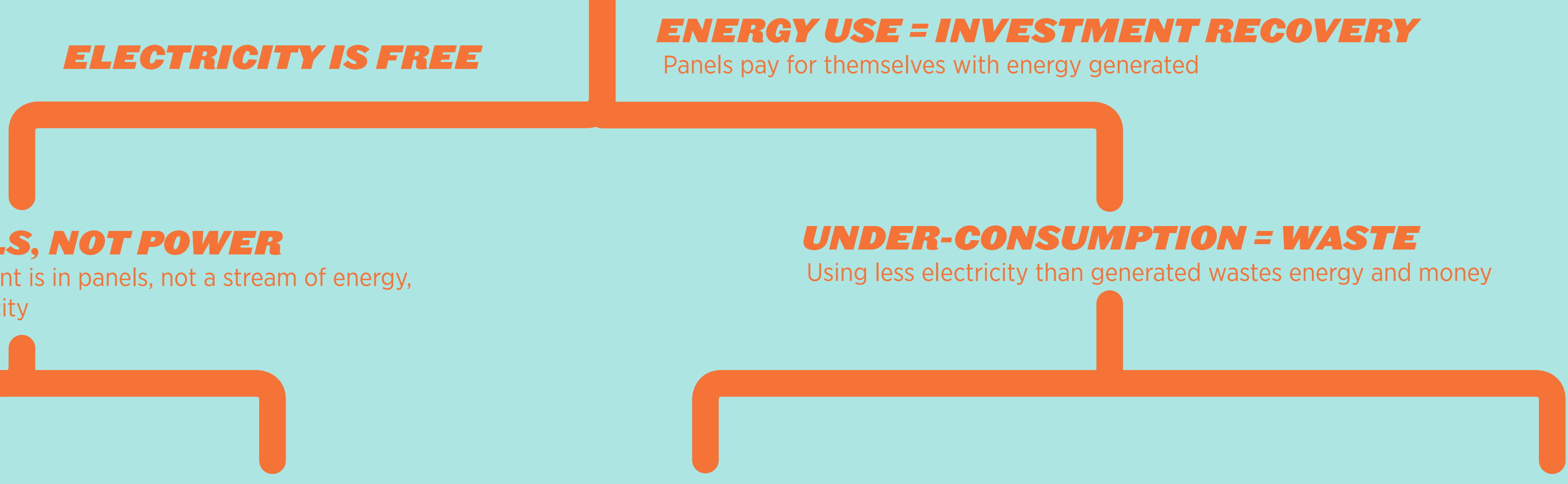
PANELS ARE A SUNK COST

Upfront investment in Solar is already spent and permanently lost.

ZNE HOMES ARE A BIG GESTURE

Moving in is a symbolic act of environmentalism.

“Energy is free and plentiful at West Village. Why would I open my windows when I can use the AC to my heart's content.”



NEW CONSTRUCTION: PAY THE MORTGAGE

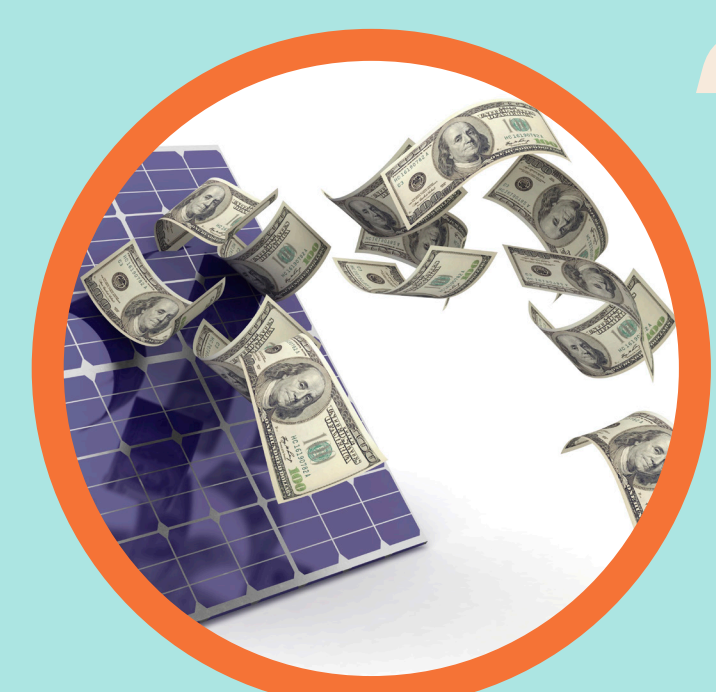
“Living here, at West Village, means that I have helped in paying for those solar panels that harness the energy needed to achieve Net Zero.”

RETROFIT: PAY THE LOAN

“My rent pays for the construction, installation, and maintenance of solar panels. I suppose that it also pays for any extra electricity generated that I do not use.”

ZNE BLACKJACK
Fear of going under leads to going over

“My role in achieving ZNE is to... Conserve as much energy as possible so we can sell what is not used. Too bad rent is not reduced if we conserve energy...would give us more incentive to conserve.”



“Power is generated already, so let's use it.”

SIGNAL

Conveys a message about the occupants



CONSPICUOUS CONSERVATION

Visible effort to obtain or signal higher social status



SYMBOLIC GESTURE

Representation of environmental values

ZNE SETS ENERGY BUDGET

Generation capacity establishes (arbitrary) target for consumption

My role in achieving ZNE is ... to balance energy used with energy that is taken in.

STATUS SYMBOL

Indicator of economic and/or social status

HIGH TECH HOME

ZNE homes are shiny, new, and cutting edge

IDENTITY

ZNE as the home for eco-heroes

ZNE AS TOOL FOR ACHIEVING PERSONAL GOALS

ZNE home can be one of numerous ways occupants attempt to live a low-carbon life

By knowing West Village is a ZNE community, I am cognizant of my energy usage and attempt to scale back when I can.

LIFESTYLE

ZNE as a way of life



My role in achieving ZNE is...

to balance energy used with energy that is taken in.

ALTRUISM

Selfless act for the benefit of the planet

PATRON OF THE PLANET

Purchase of ZNE home as a "donation" to the environment

WARM GLOW

ZNE as "feel-good" purchase

It's difficult to conserve energy because the house has modern appliances. Since they're available, I sometimes use them for convenience.

PRIUS BACKFIRE

ZNE facilitates & rationalizes greater consumption

"GREENER" STATUS QUO

No behavior change required to reduce impact

ATTRIBUTE OF THE HOME

The home saves energy so occupants don't have to think about conservation

SINGLE ACTION BIAS

One big action justifies minimal additional actions

ECO-CONVENIENCE

One time, convenient way to reduce overall carbon footprint

I'm playing a part by simply using the energy provided by West Village.

Living in a complex that produces its own energy, I am contributing to achieving Net Zero Energy.

25%

of occupants surveyed felt they did not have a role in achieving ZNE goals.