



Renewable Energy
Alaska Project



RENEWABLE JUNEAU



ENERGY SPEAKER SERIES

Wed. Oct. 21 - 12-1 PM

Heat Pump Leadership

A View From Juneau and SE Alaska

Join us to hear from these heat pump experts:

Anjuli Grantham - Renewable Juneau

Christine Woll - Juneau Commission on Sustainability

Steve Behnke - Alaska Heat Smart

Doug Woodby - Renewable Juneau

FREE Webinar - Please pre-register:

tinyurl.com/SpeakerSeries-HeatPumps

JOIN US AGAIN:

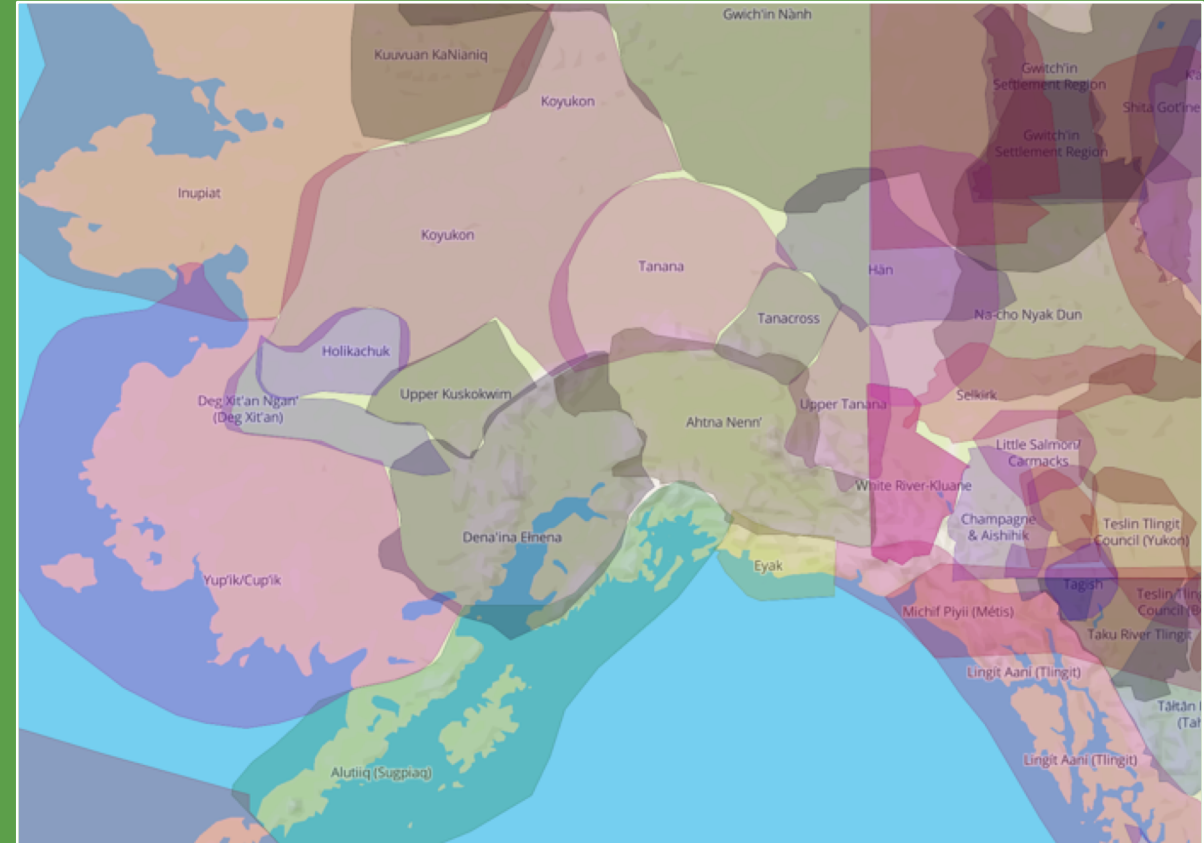
11/4 - Energy Around the World

11/18 - Power Cost Equalization

Land Acknowledgement

<https://native-land.ca>

REAP staff live and work on the ancestral and current lands and territories of the Dena'ina Elnena, Ahtna Nenn', and Lingit Aani. We acknowledge the thousands of years of stewardship of these lands and waters and life, and the Indigenous knowledge and ways of life that continue to guide us today.



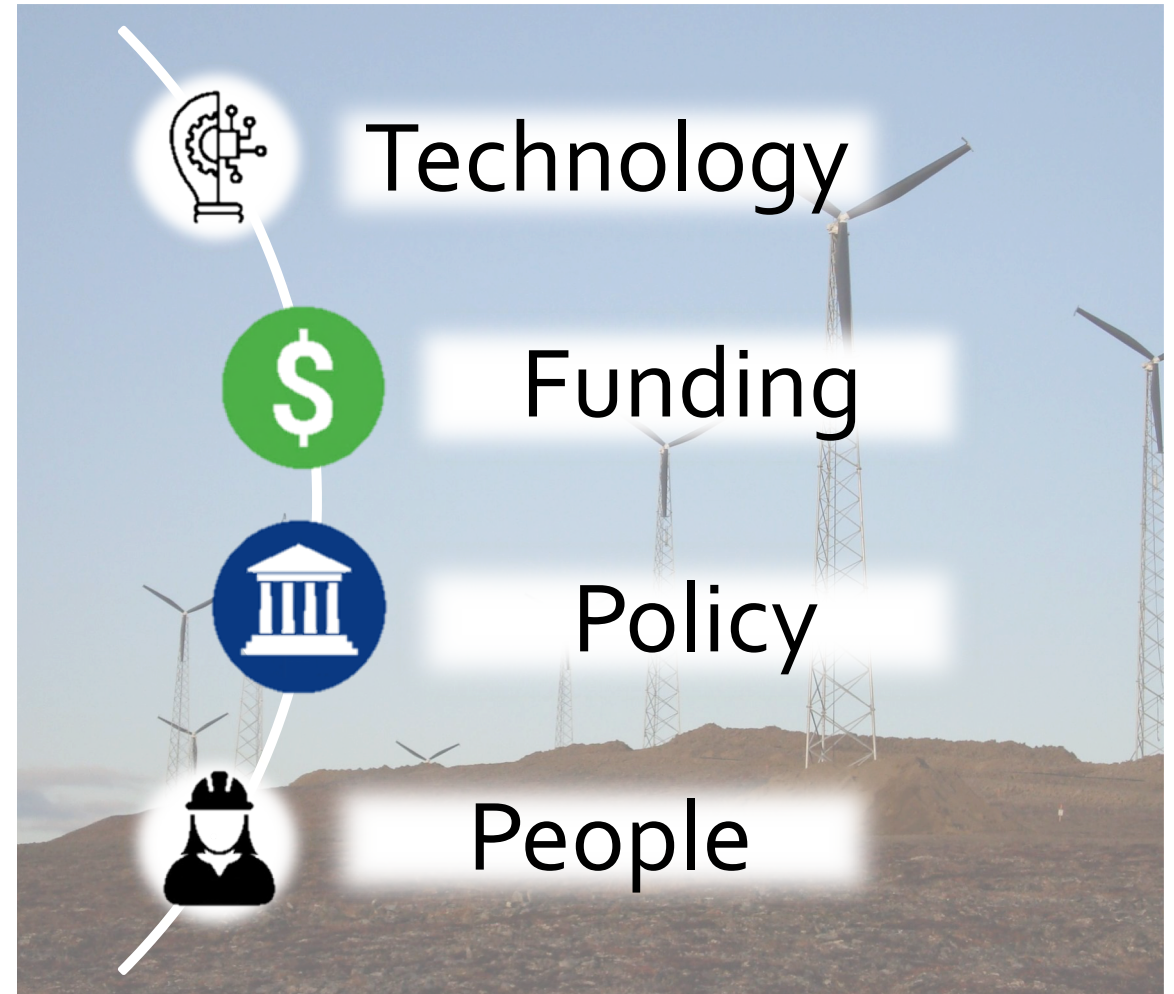
Who is REAP?



- Coalition of 70 dues-paying members
- Our mission is to advance clean energy in Alaska
- Learn more on our website AlaskaRenewableEnergy.org

 REAP

Four pillars for increasing clean energy



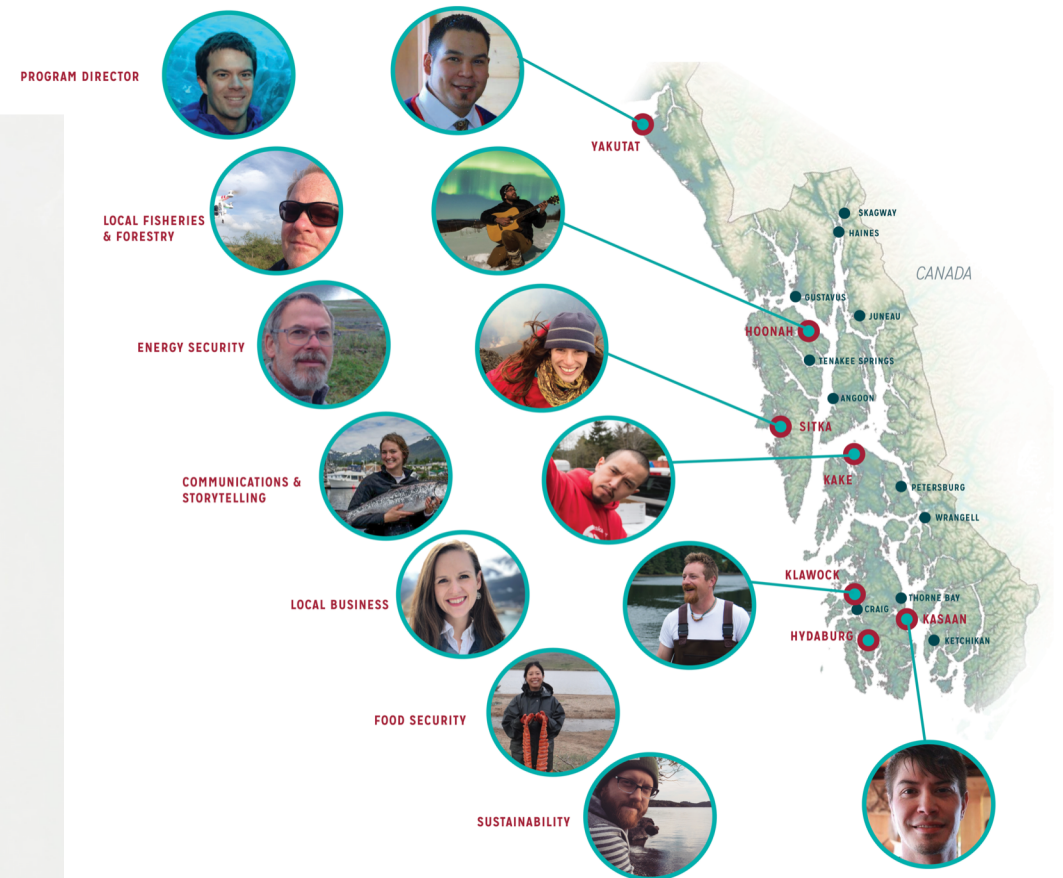
- alaskarenewableenergy.org



SUSTAINABLE SOUTHEAST PARTNERSHIP

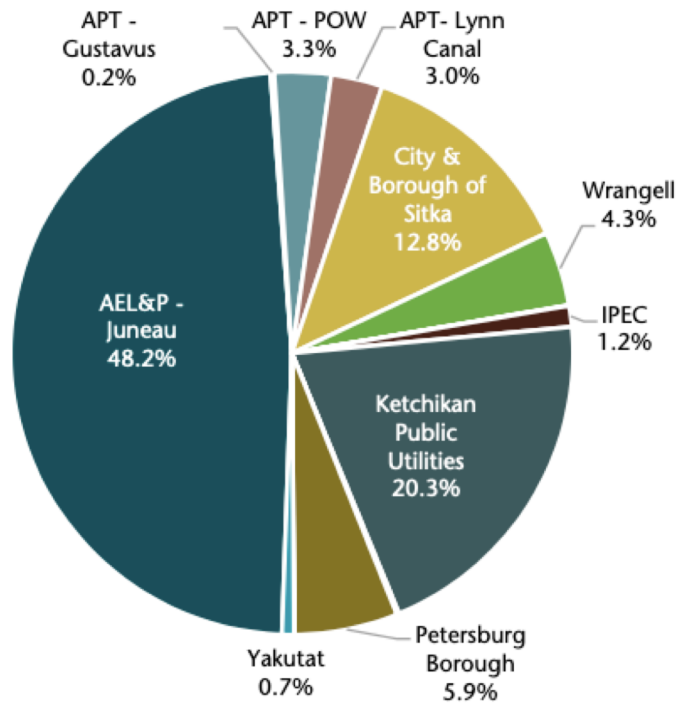
Our vision: We envision a future for our families and region with self-reliant communities, a vibrant place-based culture, healthy functioning watersheds and a robust local economy.

Our collective mission: empower rural Southeast Alaskan communities to build cultural, ecological and economic resilience.



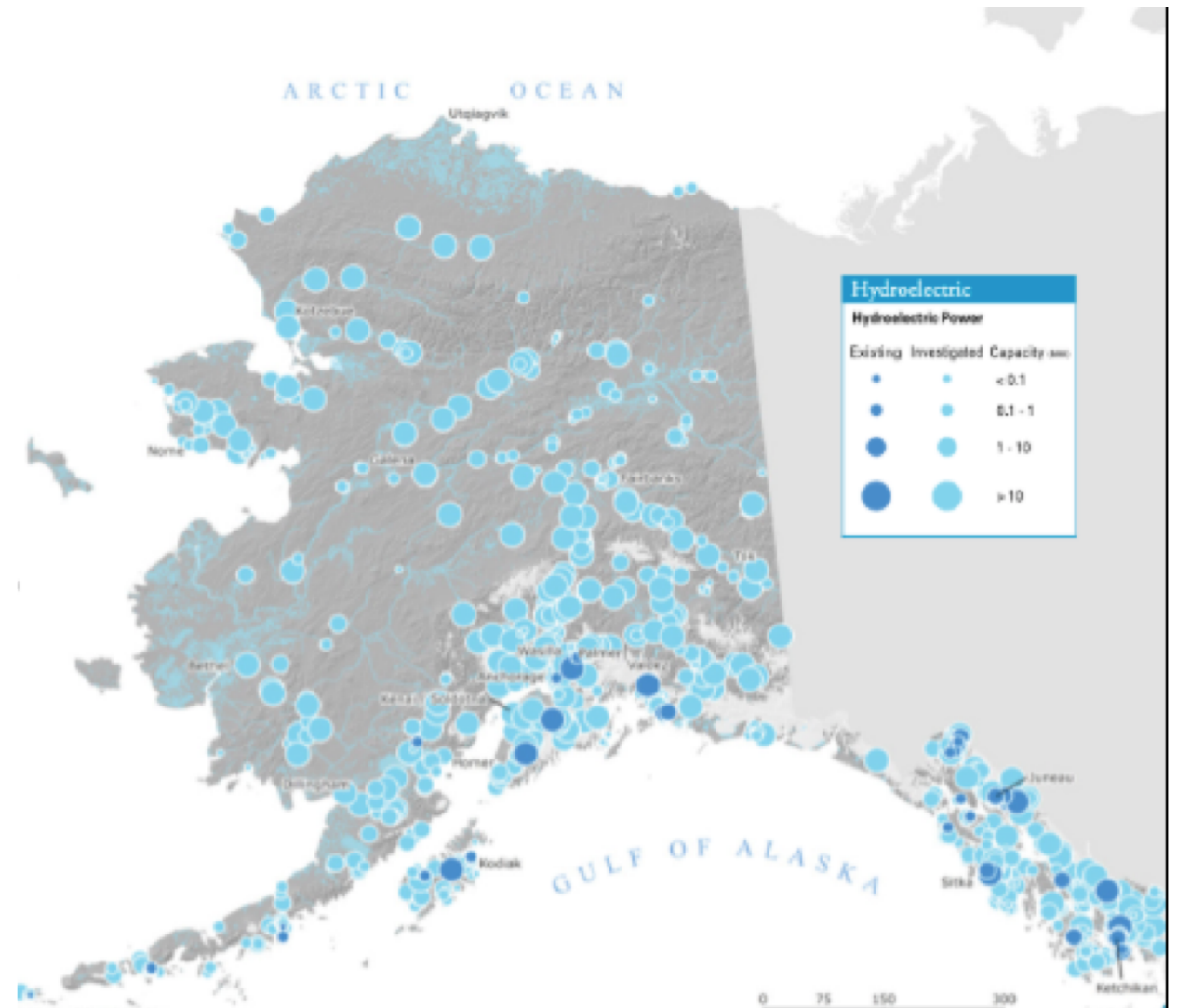
Southeast Alaska Electricity is 95% Hydro-Powered

Figure 1. Southeast Alaska Electric Sales, by Utility Grid, 2015



Source: EIA and Alaska Energy Authority, FY15 PCE Report.

alaskarenewableenergy.org



REAP Renewable Energy
Alaska Project

<https://alaskarenewableenergy.org/library/renewable-energy-atlas/>



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Juneau Heat Pump Leadership

An introduction to what's working in Juneau and
Renewable Juneau

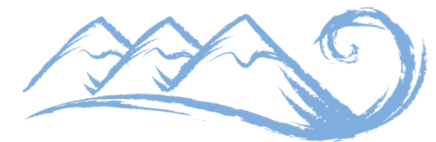


Renewable Juneau



Our success comes from:

- Local renewable energy supply and low electrical rates
- Community's commitment to reducing emissions
- Public, private, and non-profit efforts
- Advocacy and education



Renewable Juneau



Renewable Juneau

Our vision: A 100% renewable energy future for Juneau

Our pathway: Advocacy and education

Learn more: www.renewablejuneau.org





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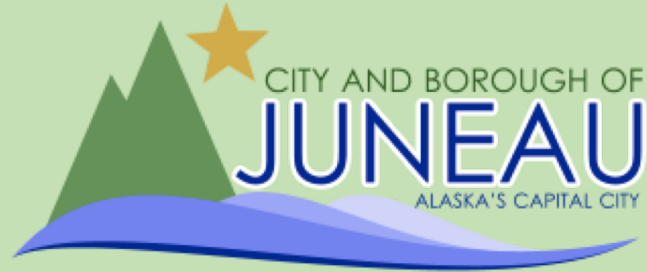
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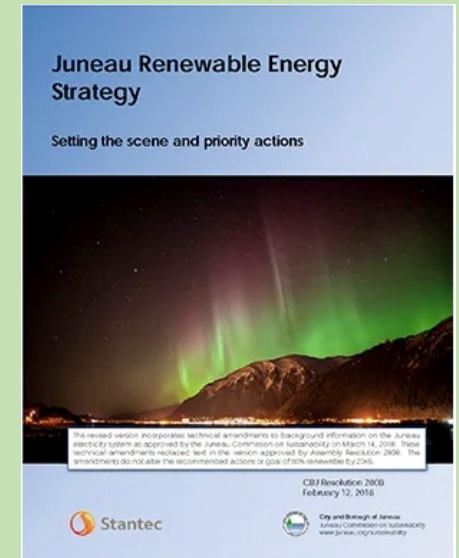
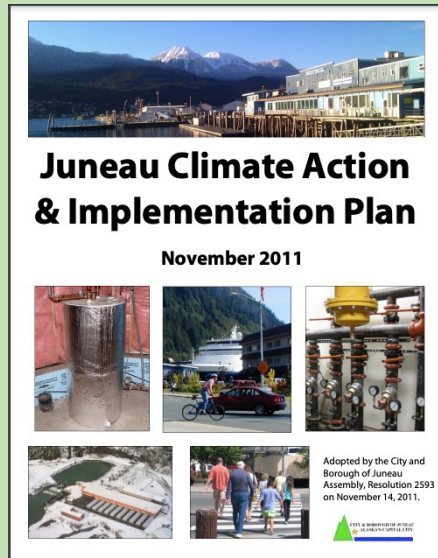
11/4 - Energy Around the World

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JUNEAU COMMISSION ON SUSTAINABILITY



The mission of the JCOS is to promote the economic, social, environmental, and governmental well-being of Juneau and all its inhabitants, now and in the future.





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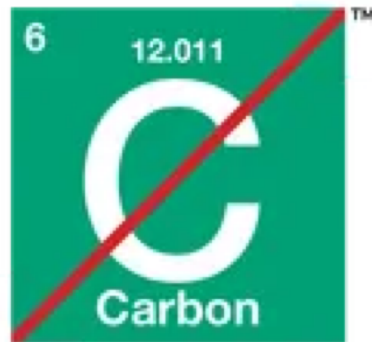
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HEAT PUMPS

and

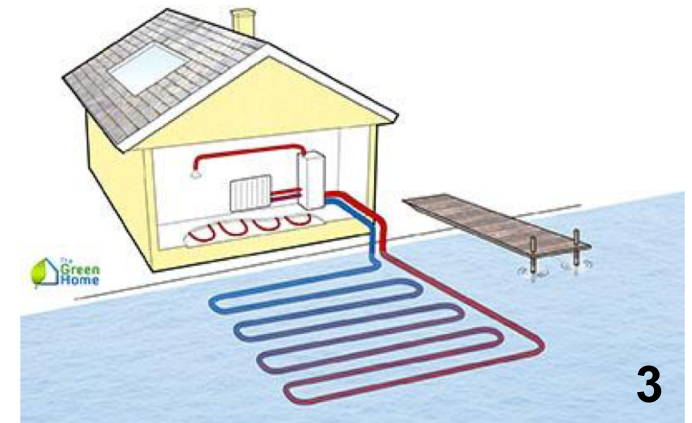
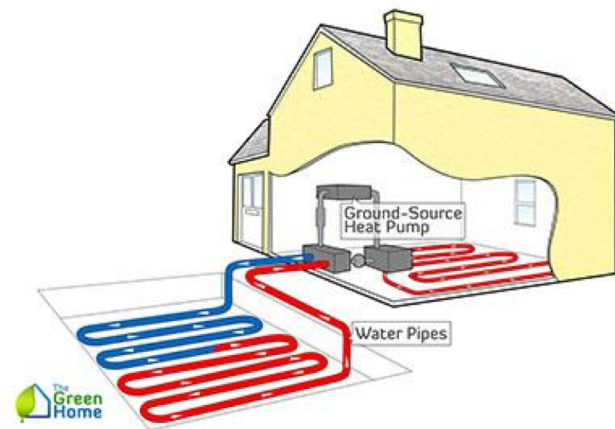
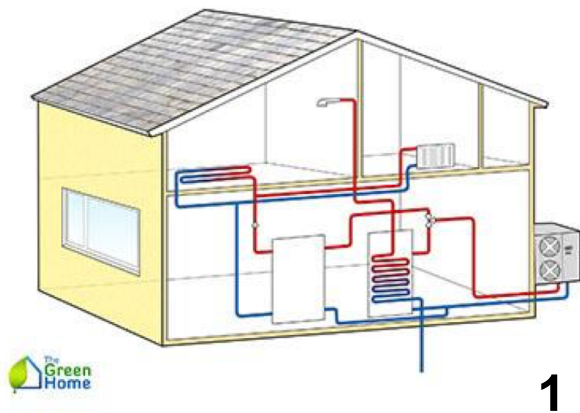


Doug Woodby

renewablejuneau.org

3 TYPES OF HEAT PUMPS (for indoor heating)

- 1) Air Source Heat Pumps – move heat from the outside air to indoors
- 2) Ground Source Heat Pumps - move heat from ground water to indoors
- 3) Water Source Heat Pumps – move heat from an open water source to indoors

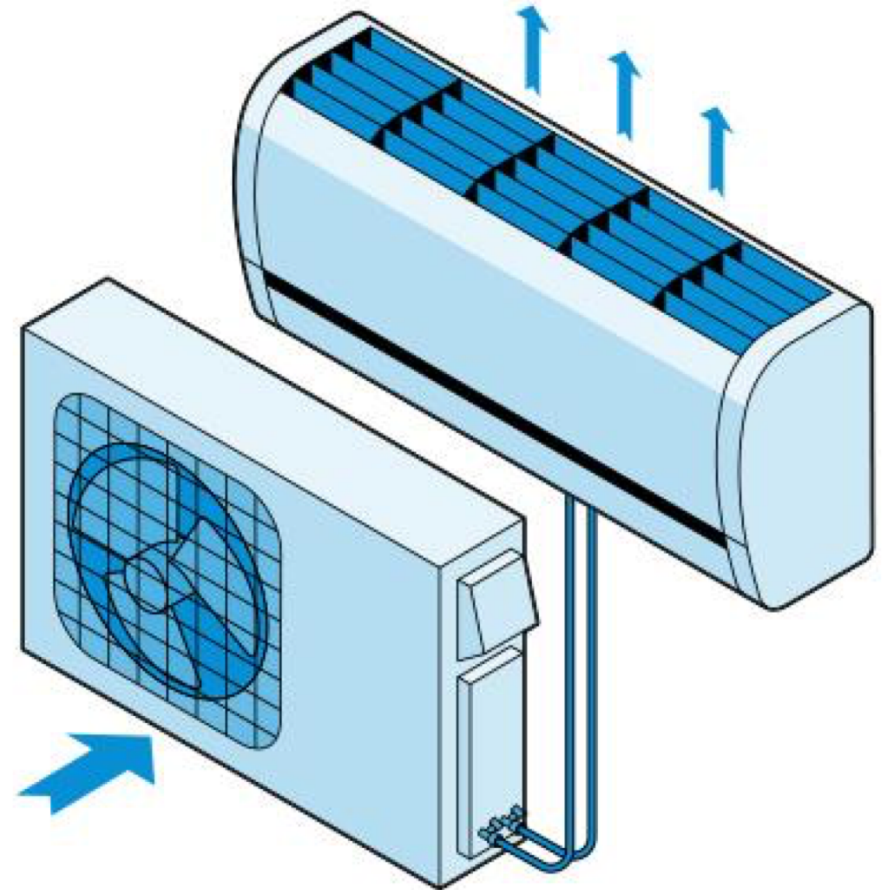


HOW HEAT PUMPS WORK

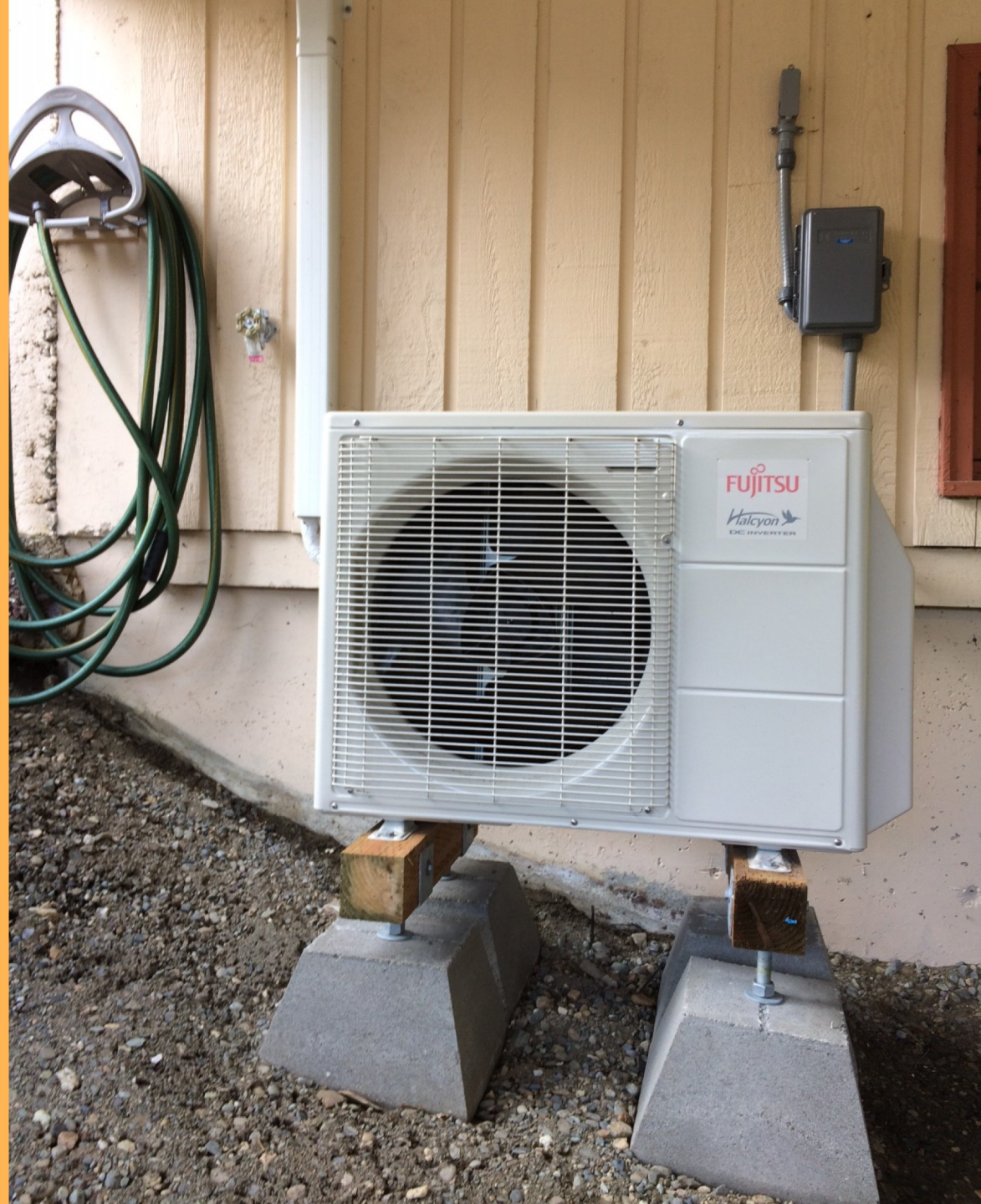
- Heat pumps move heat, they don't create it
 - *“Refrigerator in reverse”*
- Heat pumps concentrate the heat from outside by moving air (water) across coils filled with refrigerant
- The refrigerant is pumped through small diameter tubes into the house where the heat is released
- No air is moved from outside to inside
- Heat pumps run on electricity; 100% renewable hydro in Juneau

The Juneau Carbon Offset Fund installs **Air Source Heat Pumps (ASHP's)**, specifically those referred to as mini-split ductless systems.

These are typically the simplest and least expensive systems to install, and can be used in many situations.



CREDIT: CONSUMER REPORTS





Floor Model

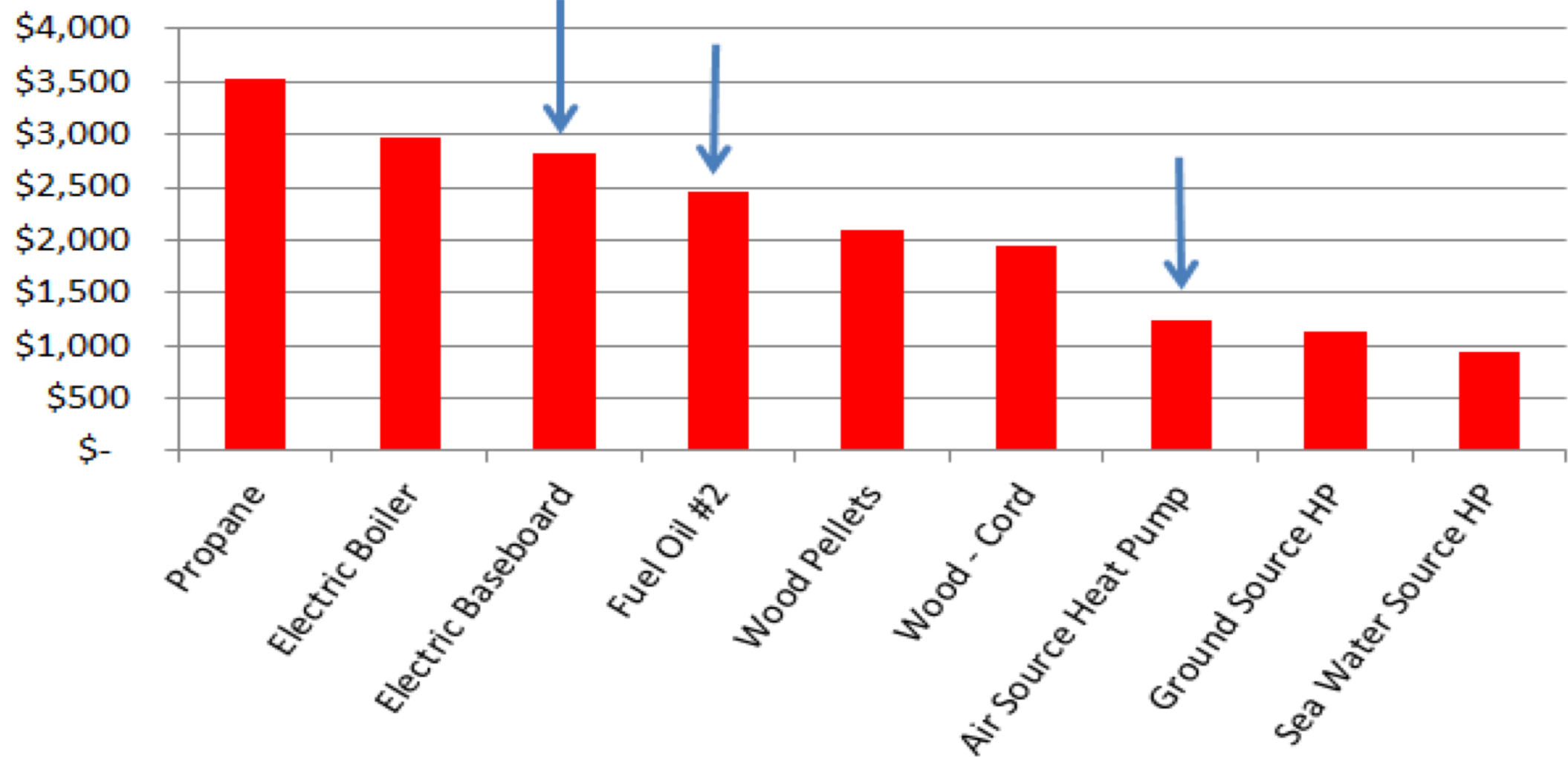


Wall Model

REASONS TO OWN ASHP'S!

- They are 2 to 4 times as efficient as electric baseboard heaters.
- Cost savings of 1/3 to 1/2 of a typical oil heating bill.
- Reduce greenhouse gas emissions by not using oil.
- Eliminate risk of fuel oil leaks and fluctuating oil prices.
- ASHP technology has improved immensely over the last 20 years:
 - Efficient to -5 to -15 degrees F
 - Reliable and low maintenance

Annual Cost to heat an average Juneau home



Costs: Installation and Maintenance

Weatherization: If not already done, cost are highly variable, in \$1000's

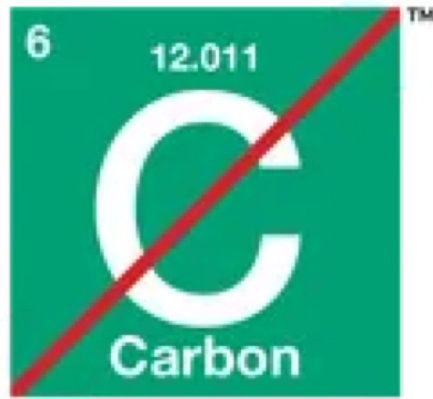
Building Permit: cost = several \$100, savings in **tax free** parts and labor

Electric Power: 240 volt supply to the outdoor unit, not necessarily included as part of the HP installation. Cost = \$300 to \$1500 depending on existing service.

Parts and Labor: Ranges \$4000 to \$5000 for a 1:1 ductless system as a retrofit.

Maintenance: low cost, mostly cleaning the filters; warranties are now in the 10 year range, some including parts and labor.

Payback Period: varies, but typically within 5 to 9 years



juneaucarbonoffset.org

Designed and Managed by *Andy Romanoff*

Juneau Carbon Offsets

- People buy “offsets” based on their fossil fuel use
- We use the funds to buy heat pumps
- Heat pumps are installed in lower income households, replacing oil heaters.
- Heat pumps are powered by renewable energy (hydro)

Offsets: eliminate carbon emissions by replacing oil heating systems with renewable energy powered systems

juneaucarbonoffset.org

Balance out your impact AND help lower-income families.
Choose one of three options to deal with your carbon footprint.

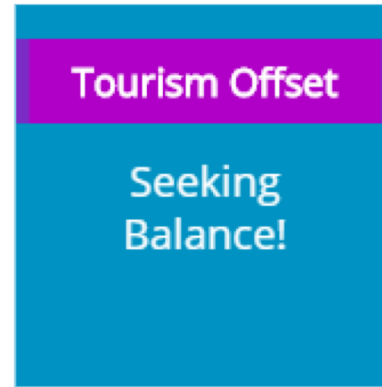


Personal Calculator: If you desire a focused approach, input detailed information into our calculator.

Juneau Visitor: If you're a guest in town, offset your flight, cruise, marine excursion and other carbon-heavy outings.

One-Click: If you just want to get right to it, select from accepted averages for your carbon output and determine your offset amount quickly.

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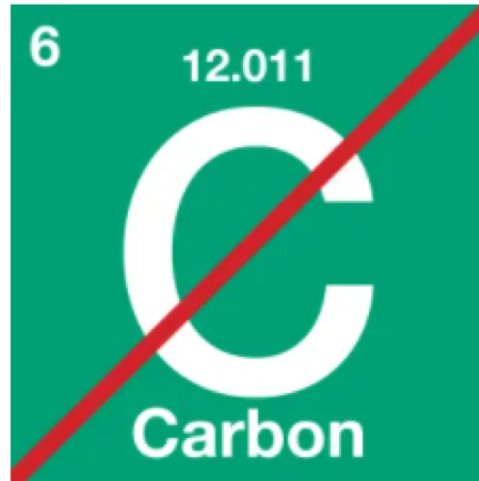
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One-Click: If you just want to get right to it, select from accepted averages for your carbon output and determine your offset amount quickly.

Juneau Visitor Offset

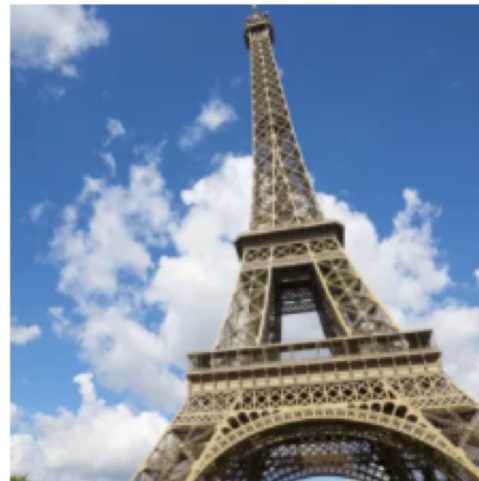
Scroll down to select various activities from your trip, such as jet travel, cruise, whale watching, and flight-seeing. Carbon offset calculations are available when you click on a product's image.

QUICK Donate & Jet Travel to Seattle/Vancouver



Instant Tour Offset

DONATE



Pacific Northwest from Europe

\$58.70

ADD TO CART



Pacific Northwest from Eastern US

\$28.35

ADD TO CART



Pacific Northwest from Asia

\$55.98

ADD TO CART

Cruise Ships



< 700 guests

\$8.85

ADD TO CART



700-1200 Guests

\$17.18

ADD TO CART



1200-2500 Guests

\$31.25

ADD TO CART



2500+ Guests

\$52.06

ADD TO CART

Marine Excursions



**Tracy Arm
via Catamaran**

\$2.85

[ADD TO CART](#)



**Tracy Arm
via small boat**

\$5.59

[ADD TO CART](#)



**Whale Watch
via Cat**

\$1.61

[ADD TO CART](#)

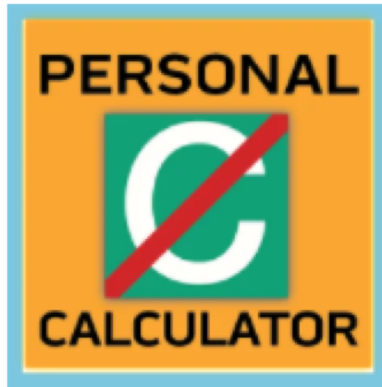


**Whale Watch
via Jet Boat**

\$1.76

[ADD TO CART](#)

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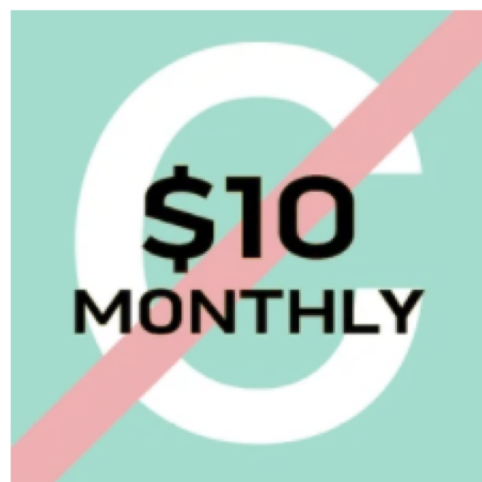
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One-Click Offsets

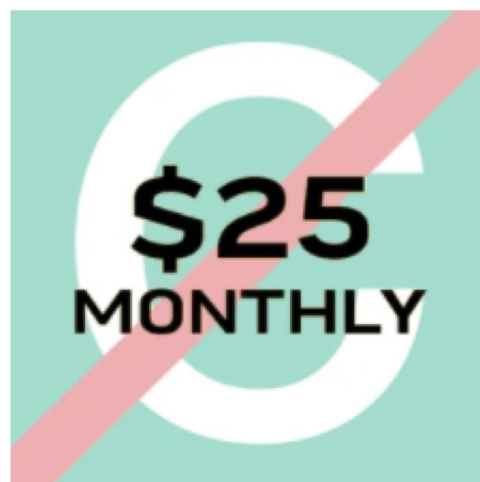
Choose your preferred offset options below, from no-fuss monthly 'subscription' offset options to specific choices to offset your driving, your air travel, your home heating or the carbon footprint of you or your family. Details about the carbon and cost calculations for each product is available by clicking on the product's icon.



\$10 Monthly Offset

\$10.00 / month

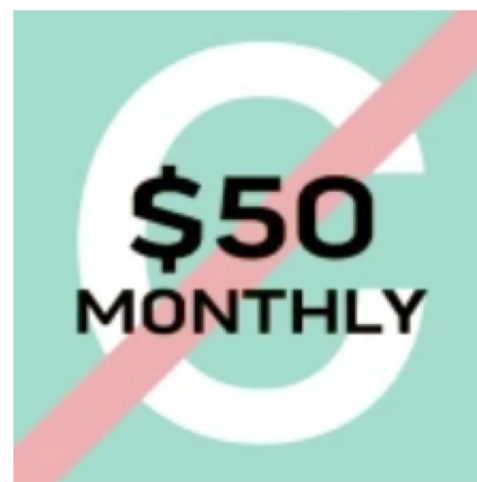
SIGN UP NOW



\$25 Monthly Offset

\$25.00 / month

SIGN UP NOW



\$50 Monthly Offset

\$50.00 / month

SIGN UP NOW



**Offset
Now**

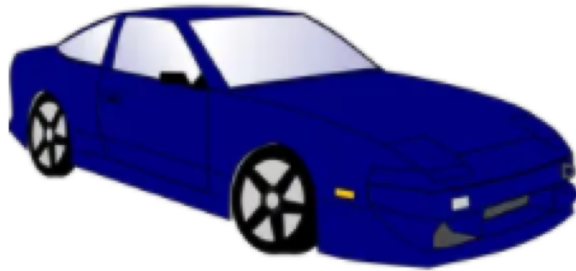
DONATE



Green
40+ mpg

\$75.99

ADD TO CART



Midsize
20-40 mpg

\$126.52

ADD TO CART



Full Size
19-28 mpg

\$158.45

ADD TO CART



PickUp / SUV
10-18 mpg

\$271.30

ADD TO CART



Condo < 1000 sq ft

\$145.50

ADD TO CART



Home < 1500 sq ft

\$218.25

ADD TO CART



Home < 2500 sq ft

\$363.75

ADD TO CART



Home > 4000 sq ft

\$582.00

ADD TO CART



Individual Annual

\$690.73

ADD TO CART



Couple Annual

\$1,380.00

ADD TO CART



Family of 3 Annual

\$2,070.00

ADD TO CART



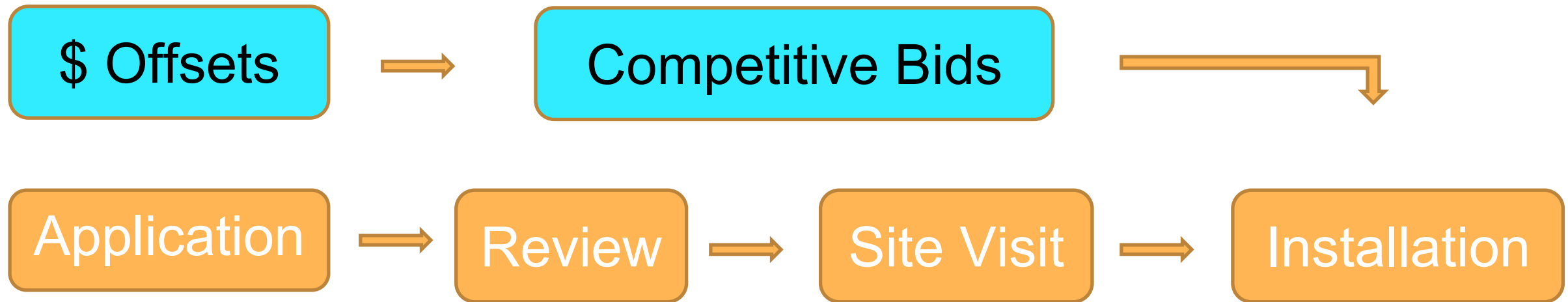
Family of 4 Annual

\$2,760.00


ADD TO CART

How Offset Funds are Used

- All offset purchases and donations go to the Juneau Community Foundation, our fund manager
- Installations done by local installers in a competitive bid process
- We seek applications for HP installations from lower income households
- Applications reviewed by a committee familiar with housing issues in Juneau



THE JUNEAU CARBON OFFSET FUND IS *UNIQUE*

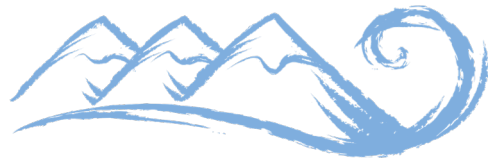
- The offset purchase funds are spent in Juneau (local multiplier effect)
 - The fund assists lower income Juneau families to lower their heating costs by 1/3 to 1/2
 - Those home heating dollars are spent in Juneau
 - The offset emissions are readily quantified (difficult for many other offset programs)
- 

We've installed 12 ASHPs in 14 months





Learn more at
renewablejuneau.org
and
juneaucarbonoffset.org



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HEAT

SMART

akheatsmart.org



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ENERGY SPEAKER SERIES

Wed. Nov. 4 - 11 AM - 12 PM

German Energy Storage



Frances Ball, Operations & Outreach Director, Launch Alaska

In 2018, Frances was awarded the German Chancellor's Fellowship through the Alexander Von Humboldt Foundation, where she spent one year researching the technical and political implications of seasonal energy storage in Germany for application in Alaska, and more broadly, the Arctic.

Dr. Kai-Philipp Kaires

Kai-Philipp is head of technical consulting at the Chair for Electrochemical Energy Conversion and Storage Systems at RWTH Aachen University. His research focuses on the opportunities of grid-connected storage systems, optimal charging strategies for electric cars and future developments in rural electrification.

FREE Webinar - Please pre-register:

tinyurl.com/SpeakerSeries-Germany

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11/18 - Power Cost Equalization

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- Christine Woll, JCOS, Christine.L.Woll@gmail.com
- Doug Woodby, Renewable Juneau, Doug.woodby@gmail.com
- Steve Behnke, Alaska Heat Smart, Steven.r.Behnke@gmail.com
- Andrew Gallagher, Alaska Heat Smart, Andrew@acgallagher.com
- Clay Good, REAP/SSP, cgood@realaska.org
- Greg Stiegel, REAP, gstiegel@realaska.org

