

# Electric Vehicle Council of Ottawa



**April 26, 2021**

Electric Vehicle Council of Ottawa Monthly Meeting

# Agenda

- ▶ Overview of agenda/introductions – Raymond Leury
- ▶ VW ID.4 – Mike Banks
- ▶ EV News – Mitchell House
- ▶ Heat Pumps – Matthew Eglin
- ▶ Past/Upcoming Events – Raymond Leury
- ▶ Round table
  - ▶ Climate Summit
  - ▶ Charging stations at Ottawa facilities

# Meet the VW ID4

Electric Vehicle Council of Ottawa (EVCO)

Electric Vehicle Council of Ottawa



Michael Banks  
Vice-President, EVCO

# Overview

- ▶ New SUV EV, how does it compare?
- ▶ The Good
- ▶ The Bad
- ▶ Conclusions



**Volkswagen ID.4**  
The first electric SUV for  
everyone.

Elect

# Is it for “everyone”? How the ID4 compares to the competition.

- ▶ ID4 joins the market with Model Y, Mach E, XC40 Recharge.



# How does ID4 compare?



## ID4

- Price (LR AWD): \$49,995
- Range: 402 km
- Towing: 1,225 kg
- Fast Charge: 125 kW (460 km/hr)
- OTA Updates: Yes



## Model Y

- Price (LR AWD): \$69,990
- Range: 525 km
- Towing: 1,588 kg
- Fast Charge: 250 kW (810 km/hr)
- OTA Updates: Yes

# How does ID4 compare?



## ID4

- Price (LR AWD): \$49,995
- Range: 402 km
- Towing: 1,225 kg
- Fast Charge: 125 kW (460 km/hr)
- OTA Updates: Yes



## Mach E

- Price (LR AWD): \$53,995
- Range: 340 km
- Towing: No
- Fast Charge: 115 kW (380 km/hr)
- OTA Updates: Yes

# How does ID4 compare?



## ID4

- Price (LR AWD): \$49,995
- Range: 402 km
- Towing: 1,225 kg
- Fast Charge: 125 kW (460 km/hr)
- OTA Updates: Yes



## XC 40 Recharge

- Price (LR AWD): \$64,950
- Range: 335 km
- Towing: 900 kg
- Fast Charge: 150 kW (420 km/hr)
- OTA Updates: Yes

But...

These aren't the SUV's you're looking for.



# ID4 is actually meant to compete with...

- ▶ Two specific vehicles, the Rav4 and CR-V.



# ID4 vs Rav 4



## ID4

- Price (LR AWD): \$49,995
- Range: 402 km
- Towing: 1,225 kg
- Fast Charge: 125 kW (460 km/hr)
- OTA Updates?: Yes
- After-tax (& rebate) Price: \$54,474



## Rav 4 Prime (SE)

- Price (AWD): \$44,990
- Range: 67 km, 6.0L/100km gas
- Towing: 1,133 kg
- Charging?: 6.6 kW
- OTA Updates?: No
- After tax and fees (& rebate) Price: \$48,088

# ID 4 vs CR-V



## ID4

- Price (LR AWD): \$49,995
- Range: 402 km
- Towing: 1,225 kg
- Fast Charge: 125 kW (460 km/hr)
- OTA Updates?: Yes
- After-tax (& rebate) Price: \$54,474



## CR-V (Touring)

- Price (LX AWD): \$42,070
- Consumption: 8.1L/100km
- Towing: 680 kg
- Plug?: No
- OTA Updates?: No
- After tax and fees Price: \$49,800

# The Good

- ▶ All EV benefits! (less maintenance, lower energy costs, less noise and pollution etc.)
- ▶ The Price!
  - ▶ ID 4 RWD base starts at \$44,995
- ▶ Both version qualify for Federal and Provincial rebates.
- ▶ DCFC speed is good
- ▶ Heat-pump is standard for Canadian version along with heated seats, steering wheel, and windshield
- ▶ EV Range at 402 is good
- ▶ Relatively-conventional cabin similar to ICE SUV
- ▶ Taos on the outside, Tiguan on the inside



# The Bad

- ▶ Limited availability this year (until US plant comes online).
- ▶ Even at \$44,995, sticker price is still too high for many shoppers who don't consider fuel costs or cost of ownership.
- ▶ Still much more expensive than cheapest base-model ICE SUVs.
- ▶ Infotainment software is reported to be buggy and slow which may or may not be corrected by over-the-air update.
- ▶ No “frunk”.
- ▶ Heavier and therefore less-efficient than other similar EVs.
- ▶ Sandy Munroe didn't like the user-interface. (He didn't notice the home/menu button).



# Conclusions

- ▶ ID4 is an excellent initial offering by VW at a surprisingly low price.
- ▶ Both versions qualify for rebates.
- ▶ As with many new EV's, availability will be very limited until mass-production catches up to demand.
- ▶ Competes well with both similarly-spec'd EV and ICE counterparts.
- ▶ Meets needs for many buyers in the small-SUV segment so should have mass appeal.
- ▶ Anyone not looking at base-model RAV4 and CR-V would be foolish to ignore ID4.
- ▶ Maybe it's time PHEV's stopped qualifying for full iZev rebate?



# EV News - April 2021

# Summary

- ▶ Honda electrification plans
- ▶ Cadillac
- ▶ Genesis
- ▶ Mercedes
- ▶ Audi
- ▶ Tesla Deliveries
- ▶ Bombardier Electrification

# Honda will focus electrification in North America



- ▶ BEV sales to be 40% of all sales by 2030, 80% in 2035, 100% 2040
- ▶ Building on partnership with GM Ultium batteries for first models in 2023
- ▶ Honda e:architecture to be deployed in 2025

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# Cadillac Electric-Only Development



- ▶ All future new vehicle releases will be electric vehicles
- ▶ Will be electric-only brand by the end of the decade
- ▶ Cadillac Lyriq pricing announced ~\$70,000 base
- ▶ ~480 km range, DC charging at 190 kW, coming first half of 2022
- ▶ Next vehicles will include a smaller SUV and Escalade-sized EV SUV

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# Electric Hyundai Genesis



- ▶ G80 Mid-sized sedan now slated for production
- ▶ All natural and recycled materials for interior
- ▶ Active noise cancelling, electronic suspension using cameras and navigation system to adjust to road conditions

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# Mercedes EQS Revealed



- ▶ WLTP range of 770 km, closer to 650 km EPA range
- ▶ Designed more for luxury than for performance
- ▶ Lower range/lower priced models can be announced for some markets in the future
- ▶ 400 volt platform instead of 800 volt system from Koreans
- ▶ Over-the-air updates, and also able to buy new software features

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# Audi Q4 E-Tron



- ▶ Marketed as the "accessible" Audi E-tron, likely around \$60,000 - \$70,000
- ▶ Likely only available as the 77 kWh, with over 450 km of range
- ▶ Max of 125 kW DC charge rate, and possible improvements in both charge rate and range with software updates
- ▶ 1200 kg towing capacity
- ▶ Larger than normal interior capacity from flat load floor
- ▶ Customizable day-time running lights with 5 different configurations

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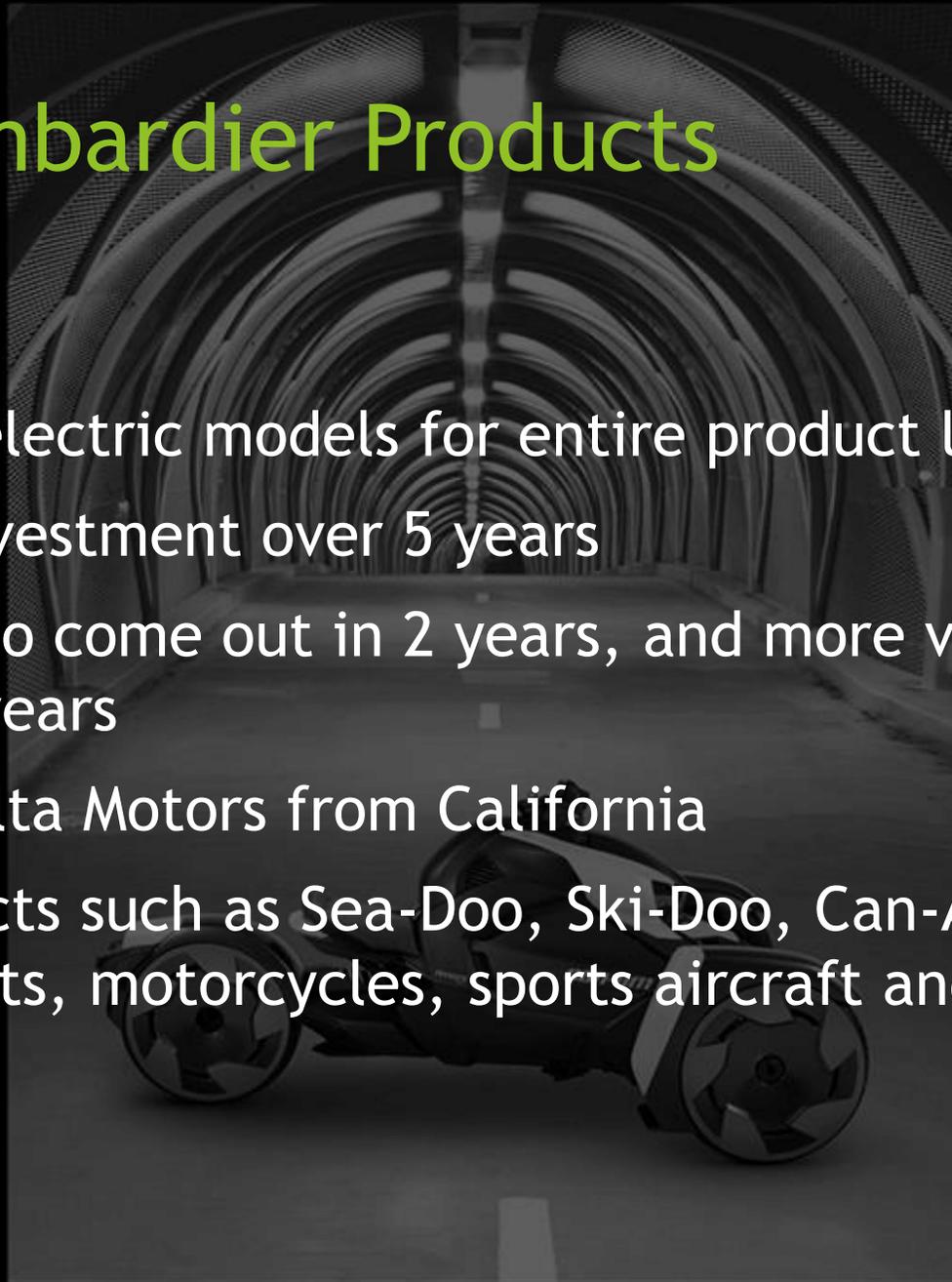
# Tesla Sets Another Record

- ▶ Delivered 184,000 vehicles in Q1, 2021
- ▶ No significant number of Model S/X because of ramping production of new models
- ▶ Target of 50% annual growth in vehicle production, and new factories in Austin and Berlin should help achieve that



# Electric Bombardier Products

- ▶ Plans to offer electric models for entire product line by 2026
- ▶ \$300 million investment over 5 years
- ▶ First products to come out in 2 years, and more vehicles will be rolled out in coming years
- ▶ Working with Alta Motors from California
- ▶ Includes products such as Sea-Doo, Ski-Doo, Can-Am, Evinrude, as well as parts for karts, motorcycles, sports aircraft and maritime activities



# Heat Pumps

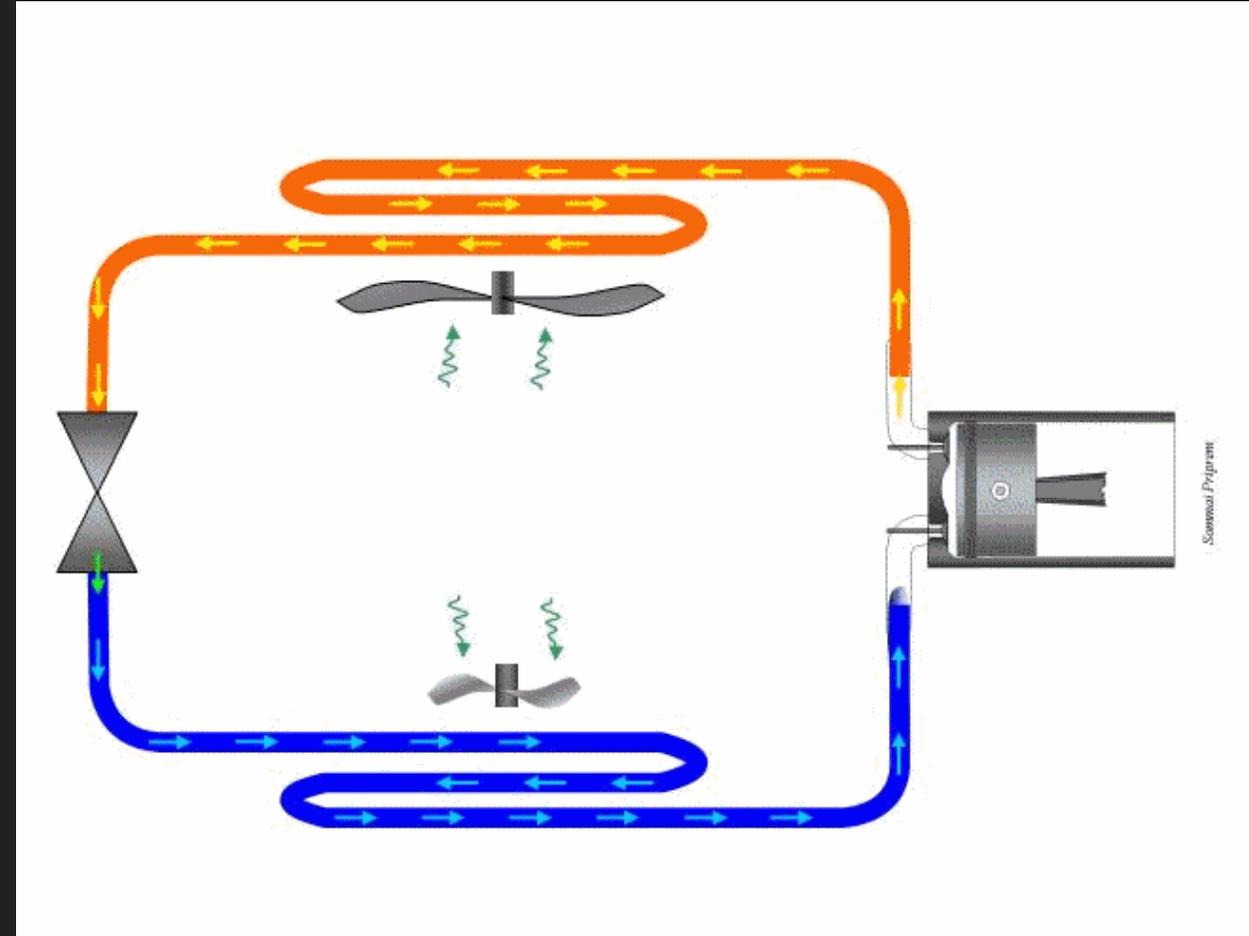
Why they matter and why you should  
own one (or more)

# What is a Heat Pump?

The most common heat pump keeps your milk cool in the fridge.

A heat pump takes heat from a low temperature and moves it to a warm temperature

It takes less energy to move the heat than it does to make it.



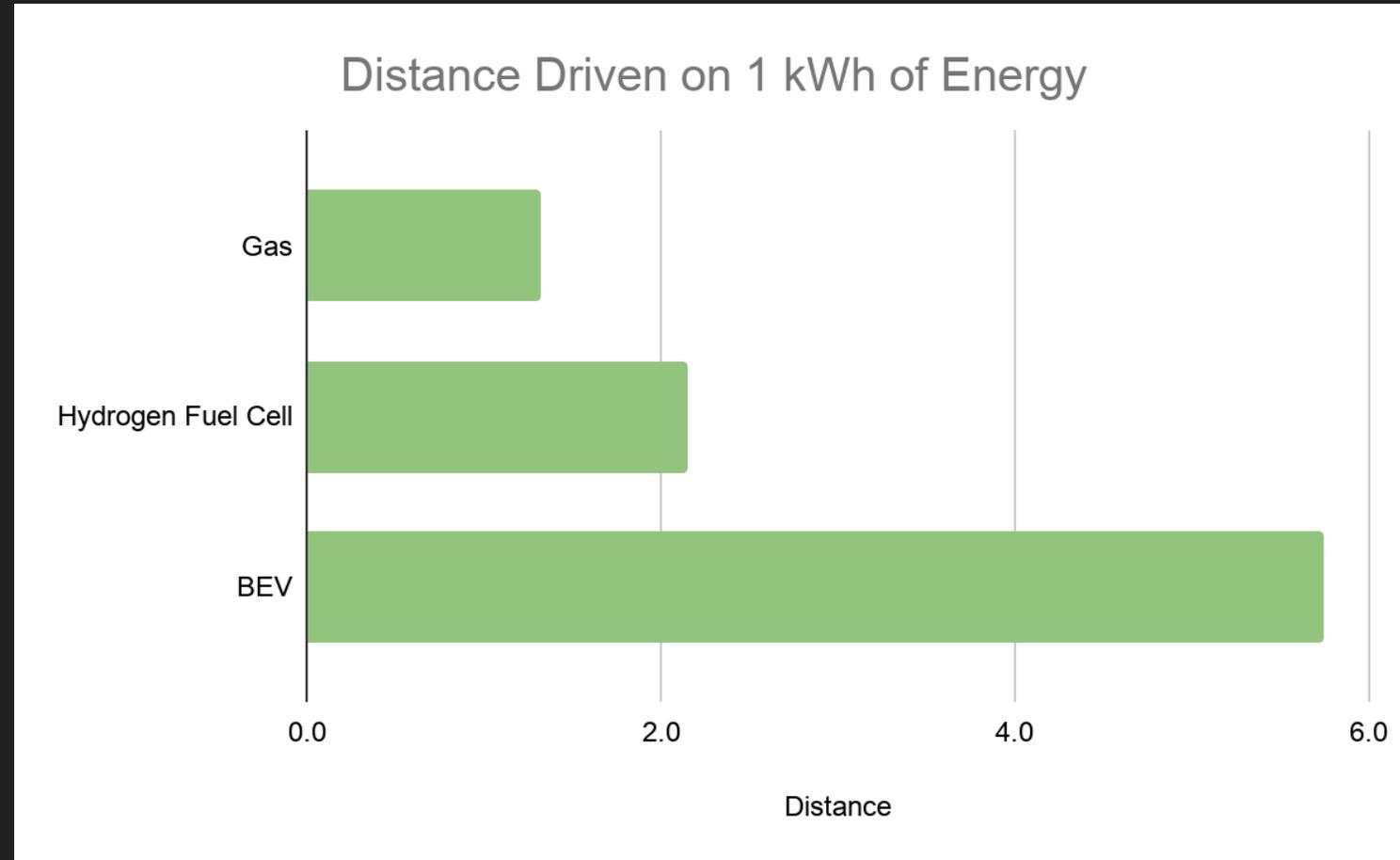
# Heat pumps come in all shapes and sizes



# Why Are Heat Pumps Important?

Let's compare heat pumps with EVs:

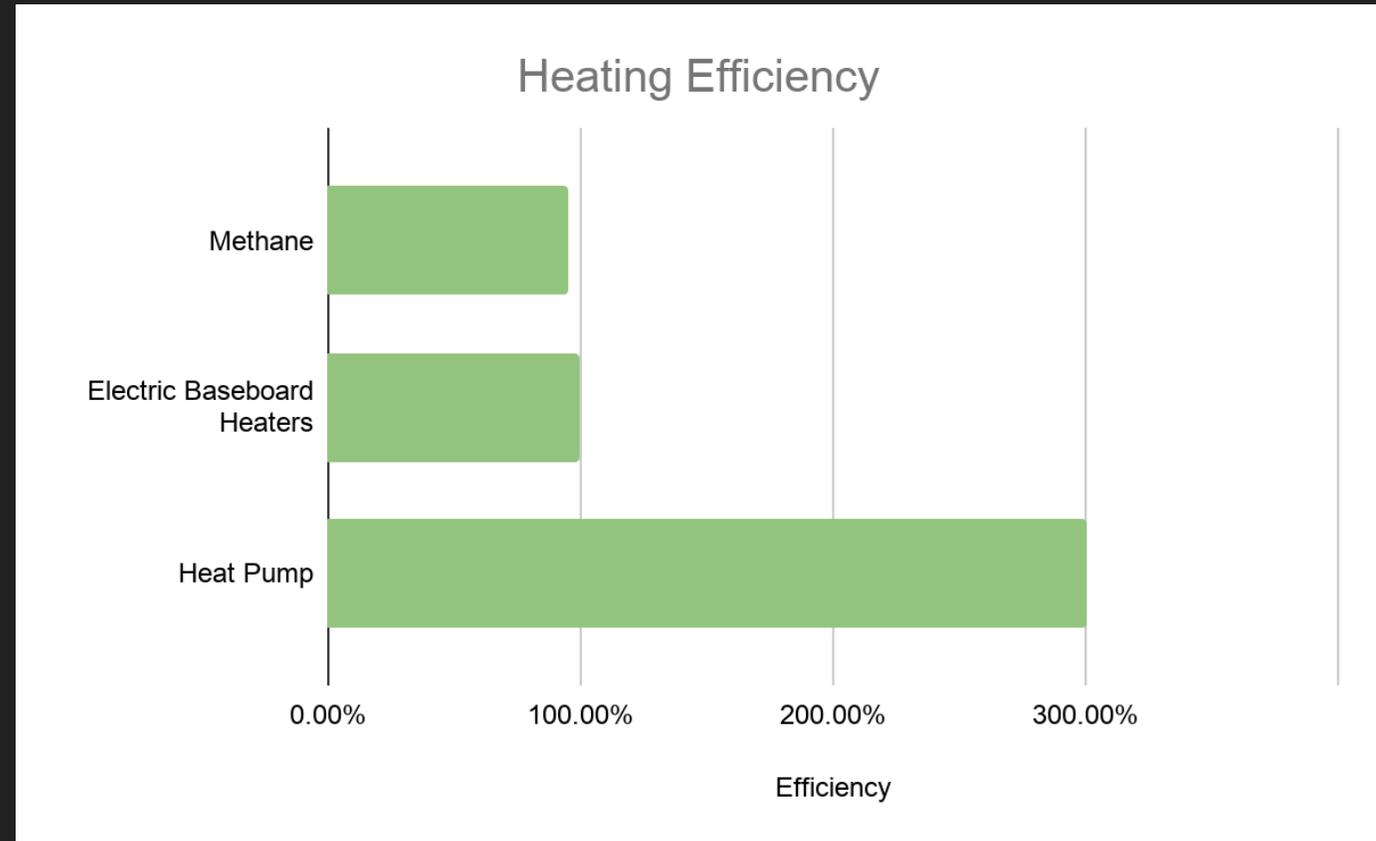
EVs allow 1 unit of energy to produce 4-5 times the travel distance



# Why Are Heat Pumps Important?

Let's compare heat pumps with EVs:

Heat pumps allow 1 unit of energy to produce 3-5 times the heat



# Heat Pumps for your home

Clothes Dryers

Hot Water Heaters

Mini Splits

# How does a Heat Pump Dry Clothes?

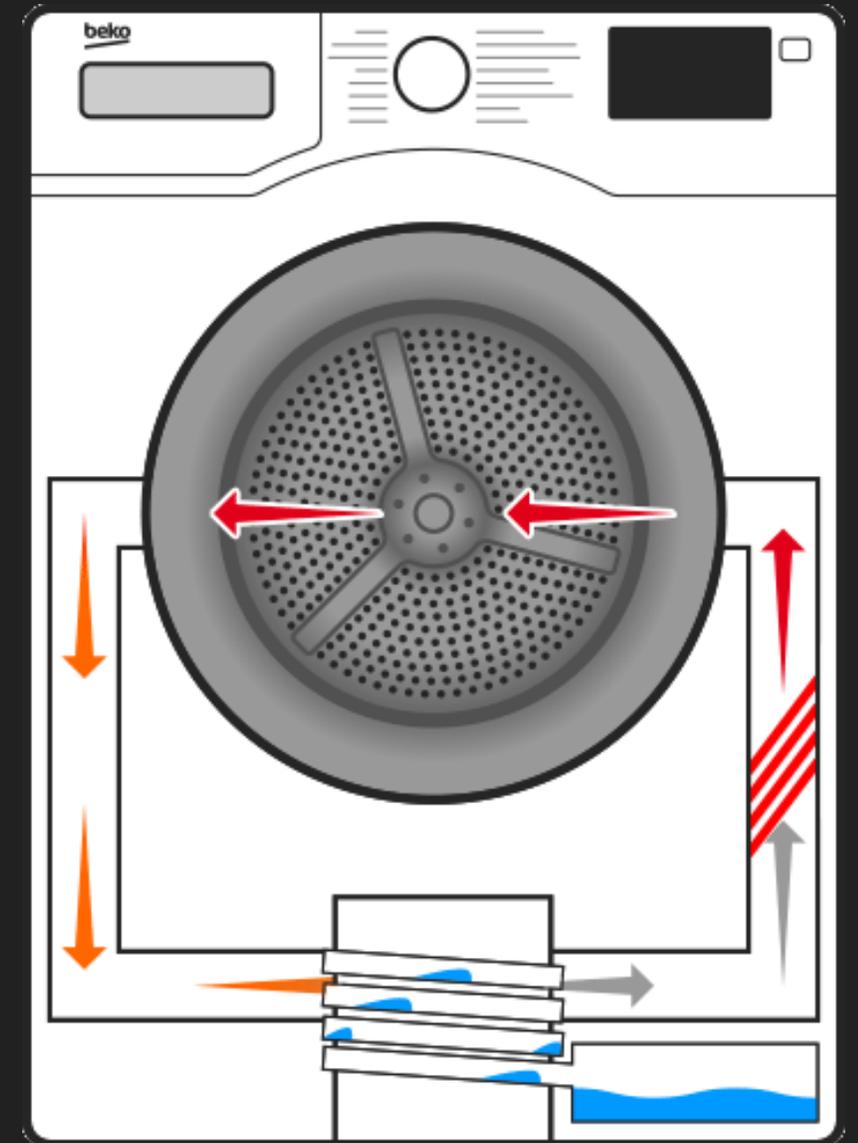
Clothes are heated by the warm side of the heat pump

The damp warm air passes over the cold side

Water is condensed and sent to the drain giving up energy on the way

The energy from cooling the air is used to heat the air going back into the drum

Closed cycle or hybrid with a supplemental heater



# Whirlpool Hybrid Heat Pump Dryer

Replaced a dryer that rated 978 kWh per year

53% improvement

Waste heat stays in the house as there is no vent

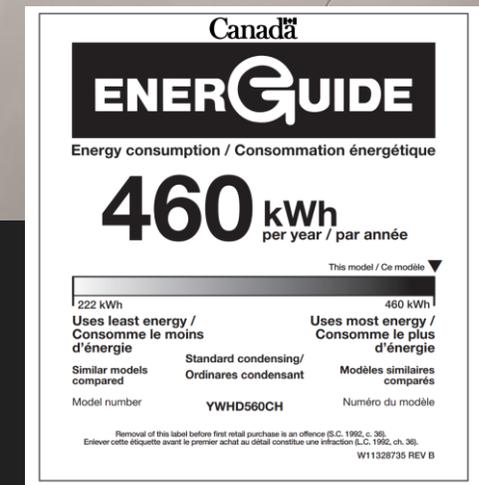
Good in the winter, we use the waste heat

Bad in the summer, but we have a solar/wind clothes dryer

Not really recommended unless you dry outside in the summer.

14A - only needs 240/20A breaker - panel capacity??

This is most efficient full sized heat pump dryer on the market



# Samsung Apartment Size Clothes Dryer

Replaced a dryer rated about 900kWh/year

84% reduction in energy usage

Almost no waste heat

Great all year round

This is the future!

Small power requirement - 240/15 amp breaker needed



Canada

# ENERGUIDE

Energy consumption / Consommation énergétique

# 145 kWh

per year / par année

▼ This model / Ce modèle

230 kWh 274 kWh

Uses least energy / Consomme le moins d'énergie	Compact 240 V / Compactes 240 V SAMSUNG	Uses most energy / Consomme le plus d'énergie
Similar models compared		Modèles similaires comparés
Model number	DV22N685*H* DV22N680*H*	Numéro du modèle

Removal of this label before first retail purchase is an offence (S.C. 1992, c. 36).  
Enlever cette étiquette avant le premier achat au détail constitue une infraction (L.C. 1992, ch. 36).



DC68-00451P-00

# Clothes Dryer Costs:

Samsung was \$1,045.00 with a 25% Energy Star Rebate, shipping and tax taking it to \$998.70

The Whirlpool came out to \$1,466.83 in total

The Samsung will pay for itself in a 2-3 years, the Whirlpool will be closer to 10.

Federal Rebates on Energy Star appliances are good unit at least March 31, make sure your retailer is taking part and has a rebate to give you.

We used FW Black and Rona.

# Heat Pump Water Heater

Heat pump water heaters allow heat to be pulled from the room in to the hot water.

Great in summer - extra AC

Winter it depends on the space - our basement is accidentally conditioned so there is waste heat from the furnace that is used to provide hot water

It allowed us to remove the dehumidifier, further reducing hydro costs.



U.S. Government Federal law prohibits removal of this label before consumer purchase.

# ENERGYGUIDE

Water Heater -Electric Tank Size (Storage Capacity):45 gallons RHEEM Model PROPH50 T2 RH375-30

## Estimated Yearly Energy Cost

**\$104**

\$120.0 \$423.0

Cost Range of Similar Models  
The estimated yearly operating cost of this model was not available when the range was published.

## First Hour Rating

(How much hot water you get in the first hour of use)

very small	low	<b>medium</b> 67.0 gallons	high
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- Your cost will depend on your utility rates and use.
- Cost range based only on models fueled by electricity with a medium first hour rating (51 - 75 gallons).
- Estimated energy cost based on a national average electricity cost of \$0.12 per kWh
- Estimated yearly energy use: 866 kWh.

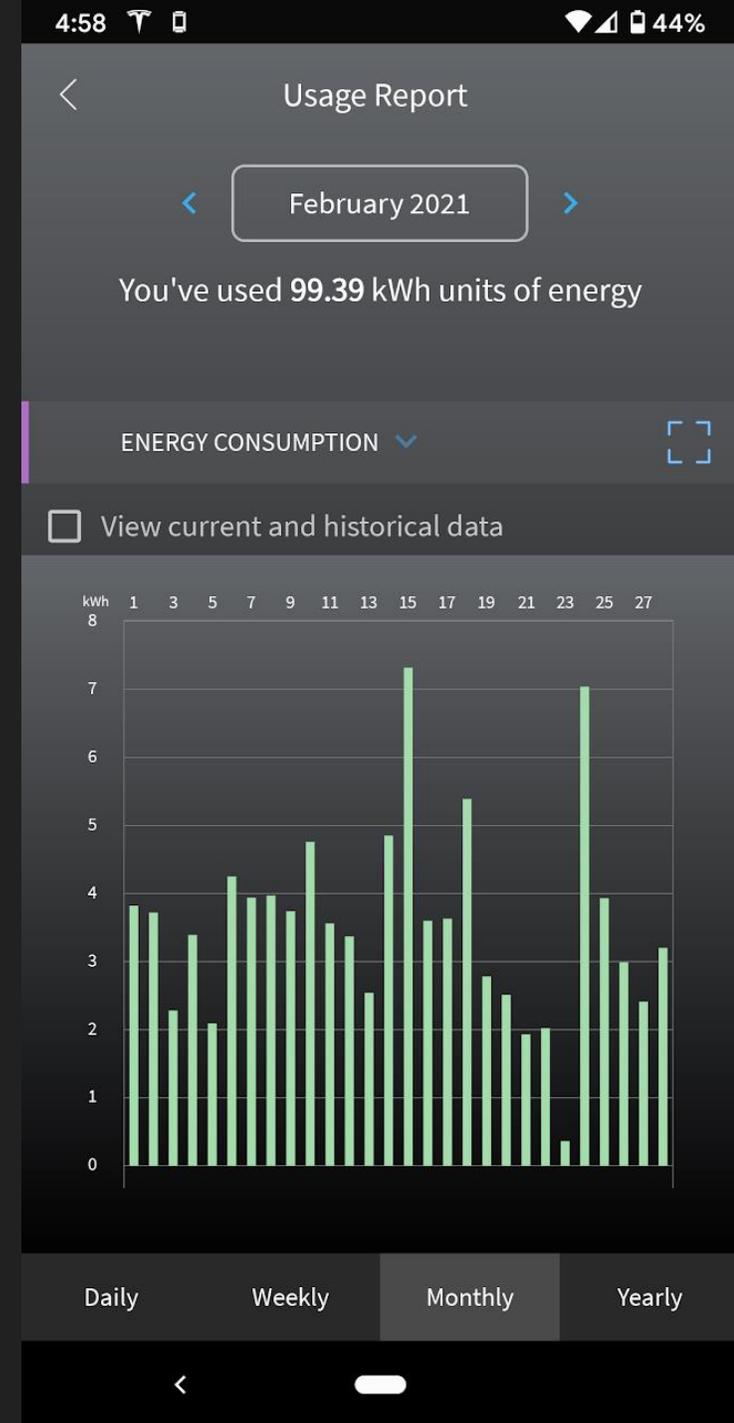
# Heat Pump Water Heater

- The tank was about \$2200, installation was about \$1000 including removing the gas water tank and putting in a tempering valve
- 2-4 years to payback
- Cost to replace an existing electric tank would be very low - plug and play.
- Other systems are available, see the video playlist for Matt Risinger's thoughts
- Only significant downside is noise, the system is a little noisier than the gas tank and it runs much longer. We added some sound insulation to reduce this effect.

# Heat Pump Water Heater

We are using about 3.5 kWh per day in winter, should be a lot less in summer.

Software is iffy :-)



# Mini Split Heat Pumps

Mini splits provide heating and cooling to 1-4 locations

Ideal for cold spots in old houses, ours cuts out the need to run a gas stove.

Great to replace “window shakers” to reduce costs of AC.

Operate to -20C or less

Cost for our system was \$9,000 with 2 heads

Performance through the winter has been really good.



# Past Events

Reaching outside the bubble!

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# Upcoming Events

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# Upcoming Events - regular

May 13 - Green Drinks

Virtual via Zoom

<http://bit.ly/GDOTTMay2021>

May 31 - Next EVCO meeting

# VIRTUAL GREEN DRINKS MAY 13, 2021 ENVIROCENTRE TAKEOVER



Jennifer Stelzer  
Community Sustainability  
Programs Director



Evan Harvey,  
Ottawa Green Business  
Coordinator



Melanie Johnston  
Home Energy & Retrofit Services  
Director

Join Us  
On Zoom

Hosted by



RSVP: [bit.ly/GDOTTMay2021](https://bit.ly/GDOTTMay2021)

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Ottawa-Renewable-Green-Energy-Meetup

**envirocentre**  
Bringing environmental change to life



# Presentations

- ▶ If you would like to present at a future meeting:
  - ▶ Send me e-mail, I will send you the template
  - ▶ Provide your slides by the Sunday before the meeting
  - ▶ I will integrate into overall presentation

# Roundtable - Leaders Summit on Climate

- ▶ Many leaders brought up carbon pricing on a global level
- ▶ New GHG Reduction Targets
  - ▶ China - carbon neutrality by 2060
  - ▶ Canada - 40-45% by 2030
  - ▶ US - 50% by 2030
  - ▶ UK - 78% by 2035
- ▶ Reduce cost of green hydrogen by 80% by 2030 - US
- ▶ Day 1: [\(170\) \[EN\] Leaders Summit on Climate - Day 1 - YouTube](#) - 7:36
- ▶ Day 2: [\(170\) \[EN\] Leaders Summit on Climate - Day 2 - YouTube](#) - 3:23
- ▶ Finance, finance, finance
- ▶ [\(170\) Financing the Race to Zero - Exponential Climate Action Summit II - YouTube](#) - 11:15

# Roundtable - Ottawa Facilities

- ▶ Blackburn Arena
  - ▶ \$5M project
  - ▶ Wiring for one charger
  - ▶ No charger...

# Roundtable!!

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Electric Vehicle Society