

Webisode 57DHXYQ October 22 2025 Worldwide Heat Pumps Work When It Gets Really Cold

In Webisode 57DHXYQ 1 Do Heat Pumps Work When It Gets Really Cold? 2 This Solar Farm in Alaska Provides Something Extra Free Food 3 Google Alerts Main Content

1 Do Heat Pumps Work When It Gets Really Cold? A common refrain is that they are only effective in mild climates We put that idea to the test **Excerpts edited by RAWSEP for brevity and clarity and**

**relationship to Residents Against Wood Smoke Emission Particulates a 501C3 nonprofit organization**

The New York Times October 15 2025 When it is colder than the tuxedo of a penguin Even very frigid air and earth have some warm energy But heat pumps work more efficiently if the gap between the temperature outside and the temperature you want inside is not too wide It is fairly easy to take air from outside that is 40 degrees Fahrenheit and use it to raise the inside temperature to 70 Fahrenheit It is harder pull that kind of heat from subzero air So the colder the air outside the less efficient the heat pump becomes But less efficient does not mean ineffective Far from it in fact It is a question of perspective said an engineer and heat pump expert at the Fraunhofer Institute for Solar Energy Systems in Freiburg im Breisgau Germany It does not mean that the efficiency is very bad It is still enough to keep you cozy When scientists pored over more than 2700 data points from 550 heat pumps in houses in Britain Canada China Germany Switzerland and the United States they found that heat pumps were producing an average of 2 point 74 heat units for every energy unit they were using even at temperatures as low as 14 to 41 degrees Fahrenheit or minus 10 Celsius to 5 Celsius In similar tests from Finland Minnesota and Alaska where temperatures dropped from 22 degrees Fahrenheit to 14 Fahrenheit during winter heat pumps still produced between 1 point 5 and 2 heat units for every energy unit Even when it is really cold heat pumps have at least double the efficiency of the fossil fuel heating system said a professor of energy and climate policy at Oxford University Of course it depends on the exact type of heat pump furnace and home and other factors If an everyday heat pump does not seem up to the task there are special models made specifically for extremely cold climates Starting in 2021 the US Department of Energy D O E ran a competition to stress test cold weather heat pumps in households and two years of data suggested that the heat pumps worked perfectly fine Air source heat pumps designed for cold climate work down to **minus 15 degrees Fahrenheit or lower** said a senior research engineer at the D O E National Renewable Energy Laboratory Cold climate heat pumps use specialized fluids to boost heat the doctor noted and are particularly designed for that climate They hit an average of 1 point 9 efficiency at 0 to 5 degrees Fahrenheit and people in the Department of Energy survey were mostly satisfied with their comfort Only in places where temperatures were consistently below 0 Fahrenheit or about minus 18 Celsius did people sometimes turn on some form of complementary heating While it is possible for very poorly insulated homes in cold climates to be heated solely with cold climate air source heat pumps it may be more cost effective in these specific cases to supplement with other forms of heating **Spine chilling stories Tales about heat pumps not working in the cold probably come from the early days of the technology** when it was still developing and when installers were still learning how to set them up properly There might be some bad faith actors spreading these stories too Heat pumps have actually been getting more efficient each year But for now the level of heat pump quality is high enough for the vast majority of homes And the expense of building in further improvements might not justify the gains We will not see the very big jumps in efficiency in the future Because it is not really necessary **The best proof that heat pumps are working even if it is cold outside is the sheer number of cold**

countries widely adopting the technology In Europe Finland Sweden Norway and Estonia have the highest share of heat pumps per household according to the European Heat Pump Association an industry group

2 This Solar Farm in Alaska Provides Something Extra Free Food Produce and power are both costly in the state So researchers are testing ways to address both issues using the same land Excerpts edited by RAWSEP for brevity and clarity and relationship to Residents Against Wood Smoke Emission Particulates a 501C3 nonprofit organization The New York Times October 21 2025 In Alaska land is easy to come by But energy and food are not So when the largest solar farm in the state which can power 1400 homes was built two years ago researchers wanted to test whether food could be grown between the arrays The rows of panels on the 45 acre site are set 50 feet apart much wider than at lower latitudes and they collect solar power on both front and back in order to capture the maximum amount of summer sunlight as the sun dances across the horizon all day and all night This test case in Houston Alaska for combining food farms and solar farms a practice called agrivoltaics was designed as a model for other communities seeking energy and food security Europe which has ambitious climate goals and limited land has been exploring high latitude agrivoltaics in recent decades but this is the first American project on an industrial scale solar array The purpose is to study how food and energy can be produced together in a place where food and energy cost a lot of money said an assistant professor at the University of Alaska Fairbanks who led the research Independent sufficiency is really important in Alaska The experiment funded by a 1 point 3 million dollar grant from the Energy Department was planned as a three year project The researchers received funds for one year of planning and one year of planting but have not had a response from the federal government regarding money for next year Similar federal research projects at state universities in Ohio New Jersey and Arizona have been paused The Energy Department did not respond to a request for comment Even with only one season of data the scientists were enthusiastic about what they could see in the rows of vegetables at harvest time Energy and agriculture have always been intertwined in Alaska The Matanuska Electric Association a cooperative that powers all the homes and businesses in the valley was founded in the early 1940s by farmers in part because dairy farmers needed to keep their milk cold The electric association wants to diversify its energy portfolio and add more clean energy said the Matanuska chief strategy officer Right now renewables mostly hydropower generate about 15 percent of the energy Solar most of which comes from the Houston site only accounts for 1 point 3 percent But Alaska is facing the prospect of an energy crisis because the local natural gas deposits that power much of the region will be depleted in a few years That means Alaskans would have to pay for imported gas or go without power Despite this new renewable energy projects have stalled in the state Plans to expand the Houston site to generate 30 megawatts from its current capacity of 8 point 5 megawatts and to build a new larger solar farm on the Kenai Peninsula have been effectively canceled by the investor Clean Capital of New York The Clean Capital chief executive said We want power purchasers to pay more they want to pay less The cost to build these projects is high In darker months Alaska does not produce much solar energy But in early April when the snow is still deep and the sun returns solar production jumps as sunlight reflecting on the white snow hits the backside of the panels The bi facing solar panels are key in Alaska said a research project manager at the Alaska Center for Energy and Power at the University of Alaska Fairbanks Thirty

percent of the energy produced in some seasons can come from the back panel Experts say that solar technology is still rapidly advancing as engineers identify new ways to maximize energy generation from the sun And agrivoltaics is a young science The National Farmers Union annual meeting had packed agrivoltaics sessions for two years in a row including this March said the executive director of Solar and Storage Industries Institute a nonprofit group that works to expand solar energy But we are seeing a focus that shifts from the federal government leading the way to states leading the way

### Google Alerts

United States Clever homeowner reveals how they got their power company to send them a negative 700 dollar bill The Cool Down Pairing solar panels with other electric appliances such as efficient heat pumps is a great method to lower utility costs even further If this idea

United States Heat pump assisted waste heat recovery for thermal management in hydrogen enabled ScienceDirect dot com investigated a hybrid energy heat pump for recovering waste heat from a PEM fuel cell for both heating and cooling In cooling mode the

United States Home expert reveals a tip to get over 800 dollars in rebates for a brand new stove The Cool Down The process of claiming your tax rebate varies by state but keep hold A cleaner more affordable future might be just one heat pump away

United States Homeowner questions highly touted HVAC technology after considering upgrade The Cool Down heat pump installations up to 8 thousand dollars through the federal rebate program However that rebate program will end before 2031 if funding runs out

United States Is your home in dire need of upgrades? The government is still giving away up to The Cool Down Homeowners can also get HEAR rebates of up to 1750 dollars on a heat pump heat pump installations up to 8 thousand dollars through the federal rebate program News Break The Home Electrification and Appliances Rebate Program or HEAR was

United States Machine Learning–Based Multiscale Quantification of Long Term Emission Contributions to ScienceDirect dot com Meteorology and anthropogenic emissions jointly drive urban fine particulate matter PM2 POINT 5 yet their long term national scale contributions remain

United States Molecular Atlas of PM 2 POINT 5 Chemical Constituents on Cardiac Conduction A Multi omics ACS Publications American Chemical Society Ambient fine particulate matter PM2 POINT 5 exposure is well documented for cardiovascular risks however limited evidence regarding the underlying

United States National Energy Awareness Month Energy Saving Tips for Homeowners The World Today Tomorrow From sealing air leaks and installing smart thermostats to embracing high efficiency heat pumps and participating in rebate programs families have

United States New Report Upgrading low income households with heat pumps provides 800 million dollars in annual energy savings health and climate benefits Sierra Club

United States Next gen HVACs expected to outsell gas furnaces despite disappearing incentives The Cool Down Heat pumps have been outselling gas furnaces since 2021 and that momentum is not slowing down

United States OBBBA and the Next Chapter of Heat Pump Commercialization National Association of Home Builders NAHB For multifamily retrofits and public housing the Midea Packaged Window Heat Pump PWHP offers an even faster option often installing in under an hour

United States Revealing the sources of water soluble PM 2 POINT 5 oxidative potential with explainable machine learning ScienceDirect dot com Abstract A critical methodological gap persists in quantifying the individual contributions of organic compounds and transition metals to PM2 POINT 5

**RAWSEP View** Threat? Threat to the right to create secondhand smoke? The Corner for Idiots or the Corner for Grift United States **From the article headline** War on your wood burner amid new calls to ban them MSN Families face the threat of a crackdown on wood burning stoves after doctors claimed emissions from wealthier households are polluting deprived

United States Why All Your Neighbors Are Talking About Heat Pumps Currently from AT&T – Yahoo One of the advantages of heat pumps is that their installation process closely mirrors that of traditional HVAC systems says Woodruff Ducted heat

Delaware Newark Last Chance Up to 2 thousand dollars in Federal Tax Credits for Heat Pumps | Delaware LIVE News NEWARK Delaware Homeowners in Delaware and Maryland aiming to upgrade their heating and cooling systems should act fast the federal tax credit of Town Square Delaware Local Incentives Delaware Gets Support from Energize Delaware Heat pump rebates range from about 1 thousand dollars to 25 hundred dollars depending on system tier and

Maryland advances clean heat pump initiative for safer homes WMAR The Wes Moore Governor of Maryland Clean Heat Initiative aims to phase out gas heating systems improve safety and air quality

Massachusetts Boston is piloting window heat pumps in affordable housing Canary Media Housing authorities in Boston and two nearby cities are installing plug in heat pumps from startup Gradient to try to swiftly and affordably cut

**New York Do Heat Pumps Work When It Gets Really Cold? The New York Times The New York Times Full Coverage**

Rhode Island East Greenwich Fire Pits Round 3 East Greenwich News East Greenwich News A revised open burning ordinance was before the Town Council Monday night Oct — EPA Smoke from Residential Wood Burning The council

Texas Austin Updated 2025 Austin Texas Water Heater Replacement Costs Permits and Incentives Financial Content Rebates for heat pump and tankless water heaters can make them financially competitive over their lifespan Understanding these options and

Washington Lacey Puget Sound Energy partners with Lacey for matching rebate program The JOLT News October 17 2025 pairs the Puget Sound Energy 4 thousand dollars Fuel Switching Heat Pump rebate heating systems with electric heat pump units Courtesy of Puget

**RAWSEP View** Corner for Idiots or Corner for Grift Burning dry wood is not the answer to air polluting wood burning emissions Wisconsin Dane County Madison **From the article headline** Under the harvest smoke? Outdoor burning and the impact on our air Public Health Madison and Dane County Only burn clean dry wood Choose nights when air quality is good and winds are calm Have a fire extinguisher water hose or other type of fire

New Zealand Wood burning and gas cooking hugely costly to healthcare systems New Zealand study finds The Guardian October 17 2025 News I Ask dot ca Indoor air pollution from the New Zealand 523 thousand wood burners was estimated to account for 446 hospital admissions for heart and lung problems and 101

**RAWSEP View** The Corner of Idiots or the Corner for Grift The Fossil Fuel Industry claims their products are cheaper than clean renewables like wind and solar Fossil Fuels are not cheaper in 2025 United Kingdom **From the article headline** Heat Pumps Face Their Toughest Test Yet Yahoo Finance For years I have followed the rise of heat pumps as one of the central technologies for decarbonizing heating The numbers have been impressive Oil Price dot com After years of rapid growth global heat pump sales are falling Lower gas prices reduced subsidies and installation bottlenecks are leading to

United Kingdom London OVO and Haven wise launch heat pump trial to make home heating smarter and more affordable OVO Group pumps to pay just 15 pounds per kilo watt hour electricity used by their heat pump helping make clean heating more affordable Henri Casteleyn a Founder

United Kingdom Warrington Think before you burn warrington dot gov dot UK Warrington Borough Council Warrington Borough Council is urging residents to consider the serious health environmental and financial impacts of using wood burning stoves

United Kingdom Wood burning stoves may damage lungs akin to cigarettes study warns JOE Wood burning stoves linked to lung damage study finds

Europe BEST Storage Building energy efficient system through short and long spectrum thermal European Heat Pump Association Full Coverage

European Union FEV1 decreases faster among older adults who use solid fuel – Healio People who use wood burning stoves at home experienced faster declines in FEV1 compared with people who did not according to data presented at

Spain Corrigendum to A two stage algorithm to estimate ground level PM2 POINT 5 concentration levels ScienceDirect dot com Corrigendum to A two stage algorithm to estimate ground level PM2 POINT 5 concentration levels in Madrid Spain from AOD satellite data and surface

China Constructing the 3D spatial distribution of PM2 POINT 5 concentrations during the 2022 Beijing ScienceDirect dot com Development of optimized deep learning models tailored for spatiotemporal inversion of PM2 POINT 5 Novel quantitative analysis of three dimensional PM