

Actual impact of heat pumps to energy performance of apartment buildings in Estonia

Reino, Arbo; Hamburg, Arvi 2019 IEEE 60th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCon), 7-9 October 2019 : conference proceedings 2019 / 6 p. : ill
<https://doi.org/10.1109/RTUCon48111.2019.8982370>

Aggregated energy flexibility provision using residential heat pumps

Plaum, Freddy; Ahmadiyahangar, Roya; Rosin, Argo 2022 IEEE 16th International Conference on Compatibility, Power Electronics, and Power Engineering (CPE-POWERENG) 2022 / 5 l <https://doi.org/10.1109/CPE-POWERENG54966.2022.9880898>

Air-to-water heat pump monitoring in the cold climate region

Kõiv, Teet-Andrus; Ling, Mariin; Tennokese, Kaspar Innovative Solutions in the Field of Engineering Sciences : selected, peer reviewed papers from the 2014 International Conference on Applied Mechanics and Mechanical Automation (AMMA 2014), May 20-21, 2014, Macao, China 2014 / p. 599-603 : ill

Buildings' energy efficiency measures effect on CO2 emissions in combined heating, cooling and electricity production

Pylsy, Petri; Lylykangas, Kimmo Sakari; Kurnitski, Jarek Renewable and sustainable energy reviews 2020 / art. 110299, 18 p : ill
<https://doi.org/10.1016/j.rser.2020.110299> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Comparison of COP estimation methods for large-scale heat pumps used in energy planning

Pieper, Henrik; Ommen, Torben; Kjær Jensen, Jonas Energy 2020 / art. 117994, 13 p. : ill <https://doi.org/10.1016/j.energy.2020.117994>

Coupling of the electricity and district heat generation sectors with building stock energy retrofits as a measure to reduce carbon emissions

Jokinen, Ilkka; Lund, Andreas; Hirvonen, Janne; Jokisalo, Juha; Kosonen, Risto; Lehtonen, Matti Energy conversion and management 2022 / art. 115961, 17 p. : ill <https://doi.org/10.1016/j.enconman.2022.115961> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Decarbonisation of fossil-fuel CHP based district heating system = Fossiilkütustel põhineva CHP kaugküttesüsteemi dekarboniseerimine

Rušeljuk, Pavel 2023 <https://doi.org/10.23658/taltech.62/2023> <https://digikogu.taltech.ee/et/Item/84455e85-92bf-4aba-8623-86c0904a8747>
https://www.ester.ee/record=b5640849*est

Decarbonization strategies of Helsinki metropolitan area district heat companies

Su, Yijie; Hiltunen, Pauli; Syri, Sanna; Khatiwada, Dilip Renewable and Sustainable Energy Reviews 2022 / Art. 112274
<https://doi.org/10.1016/j.rser.2022.112274> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

The effect of hydronic balancing on room temperature and heat pump efficiency of a building with underfloor heating

Thalfeldt, Martin; Simson, Raimo; Kurnitski, Jarek Energy procedia 2016 / p. 467-477 : ill
<https://doi.org/10.1016/j.egypro.2016.09.178>

Emissions and power demand in optimal energy retrofit scenarios of the Finnish building stock by 2050

Hirvonen, Janne; Heljo, Juhani; Jokisalo, Juha; Kurvinen, Antti; Saari, Arto; Niemelä, Tuomo; Sankelo, Paula; **Kosonen, Risto** Sustainable cities and society 2021 / art. 102896, 22 p. : ill <https://doi.org/10.1016/j.scs.2021.102896> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Energiaarvestus toob selguse

Kurnitski, Jarek Äripäev 2019 / Sisustaja, lk. 30

Energy and indoor climate performance of heat pumps and dehumidification

Napp, Margus; Kalamees, Targo The Final Research Report of the project "Sustainable Management of Historic Rural Churches in the Baltic Sea Region (SMC)" 2013 / p. 102-125

Energy supply and storage optimization for mixed-type buildings

Rikkas, Elina Rebecka; Lahdelma, Risto Energy 2021 / art. 120839 <https://doi.org/10.1016/j.energy.2021.120839>

Ennustatakse soojuspumpade arvu kiiret kasvu

Risthein, Endel Elektriala 2004 / 5, lk. 28

Exhaust air heat pump heat recovery system for apartment buildings

Kõiv, Teet-Andrus; Mikola, Alo; Kuusk, Kalle Lecture Notes in Information Technology. Vol 13, 2012 International Conference on Power and Energy Systems (ICPES 2012), April 12-13, 2012, Hong Kong 2012 / p. 250-255 : ill

5th generation district heating and cooling (5GDHC) implementation potential in urban areas with existing district heating systems

Volkova, Anna; Pakere, Ieva; Murauskaite, Lina; Huang, Pei; **Lepiksaar, Kertu**; Zhang, Xinxing Energy reports 2022 / p. 10037-10047 <https://doi.org/10.1016/j.egyvr.2022.07.162> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Geothermal energy piles and borehole design with heat pump in a whole building simulation

Fadejev, Jevgeni Liginullenergiahooned täna ja homme : artiklite kogumik 2015 / p. 126-131 : ill

Geothermal energy piles and boreholes design with heat pump in a whole building simulation software

Fadejev, Jevgeni; Kurnitski, Jarek Energy and buildings 2015 / p. 23-34 : ill

Geothermal heat pump plant performance in a nearly zero-energy building

Fadejev, Jevgeni; Simson, Raimo; Kurnitski, Jarek; Kesti, Jyrki; Mononen, Tarmo; Lautso, Petteri Energy procedia 2016 / p. 489-502 : ill <http://dx.doi.org/10.1016/j.egypro.2016.09.087>

GIS-based approach to identifying potential heat sources for heat pumps and chillers providing district heating and cooling

Pieper, Henrik; Lepiksaar, Kertu; Volkova, Anna International Journal of Sustainable Energy Planning and Management 2022 / p. 29-44 <https://doi.org/10.54337/ijsepm.7021> [Journal metrics at Scopus](#) [Article at Scopus](#)

Heat pump induction motor faults caused by soft starter topology — case study

Kudelina, Karolina; Vaimann, Toomas; Rassõlkin, Anton; Kallaste, Ants; Huynh, Van Khang 2021 IEEE 19th International Power Electronics and Motion Control Conference, The Silesian University of Technology Gliwice, Poland, 25 - 29 April, 2021 (PEMC) : proceedings 2021 / p. 454-459 : ill <https://doi.org/10.1109/PEMC48073.2021.9432506>

Heat pump use in rural district heating networks in Estonia

Lepiksaar, Kertu; Kalme, Kiur; Siirde, Andres; Volkova, Anna Environmental and climate technologies 2021 / p. 786–802 <https://doi.org/10.2478/rtuct-2021-0059> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Heat recovery from exhaust air as a thermal storage energy source for geothermal energy piles

Fadejev, Jevgeni; Simson, Raimo; Kurnitski, Jarek; Kesti, Jyrki Energy procedia 2016 / p. 478-488 : ill <http://dx.doi.org/10.1016/j.egypro.2016.09.179>

Heating energy-saving potentials in HVAC system of swimming halls : a review

Yuan, Xiaolei; Chen, Zhisen; Liang, Yumin; Pan, Yiqun; Jokisalo, Juha; Kosonen, Risto Building and environment 2021 / art. 108189, 18 p. : ill <https://doi.org/10.1016/j.buildenv.2021.108189> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Heating system efficiency aspects in low-energy residential buildings = Küttesüsteemi efektiivsuse aspektid madalenergia eluhoonetes

Maivel, Mikk 2015

Heating system return temperature effect on heat pump performance

Maivel, Mikk; Kurnitski, Jarek Energy and buildings 2015 / p. 71-79 : ill

Heating system return temperature effect on heat pump performance

Maivel, Mikk; Kurnitski, Jarek 11th International Energy Agency Heat Pump Conference 2014 : 12-16 May 2014, Montréal (Québec), Canada 2014 / p. 1-8 : ill

Hybrid heat pump performance evaluation in different operation modes for single-family house

Tihana, Jelena; Ali, Hesham; Apse, Jekaterina; Jekabsons, Janis; Ivancovs, Dmitrijs; Gaujena, Baiba; Dedov, Andrei Energies 2023 / art. 7018 <https://doi.org/10.3390/en16207018>

Identification, implementation and simulation of ground source heat pump with ground temperature modeling

Köse, Ahmet; Petlenkov, Eduard BEC 2016 : 2016 15th Biennial Baltic Electronics Conference : proceedings of the 15th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 3-5, 2016, Tallinn, Estonia 2016 / p. 163-166 : ill http://www.ester.ee/record=b2150914*est

Investigations of different control strategies for heat pump systems in a residential ZEB in the nordic climate [Online resource]

Clauss, John; Sartori, Igor; Alonso, Maria Justo; Thalfeldt, Martin; Georges, Laurent 12th IEA Heat Pump Conference : presentations, Wednesday, May 17 2017 / 0.1.3.3, 11 p. : ill <https://hpc2017.org/wp-content/uploads/2017/06/o133.pdf>

Kaevandusvesi soojustumpade energiaallikana

Karu, Veiko Inseneeria 2012 / lk. 16-21 : ill

Kuidas säästa?

Thalfeldt, Martin Õhtuleht 2021 / Lk. 17 <https://dea.digar.ee/article/oh tuleht/2021/10/26/13.3>

Large-scale heat pumps for district heating systems in the Baltics : potential and impact

Volkova, Anna; Koduvere, Hardi; Pieper, Henrik Renewable and sustainable energy reviews 2022 / art. 112749

<https://doi.org/10.1016/j.rser.2022.112749> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Low-temperature waste heat enabling abandoning coal in Espoo district heating system

Hiltunen, Pauli; Syri, Sanna Energy 2021 / art. 120916, 11 p. : ill <https://doi.org/10.1016/j.energy.2021.120916> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Method of linear approximation of COP for heat pumps and chillers based on thermodynamic modelling and off-design operation

Pieper, Henrik; Krupenski, Igor; Markussen, Wiebke Brix; Ommen, Torben; **Siirde, Andres; Volkova, Anna** Energy 2021 / art.

120743 : ill <https://doi.org/10.1016/j.energy.2021.120743> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modeling an alternate operational ground source heat pump for combined space heating and domestic hot water power sizing

Ahmed, Kaiser; Fadejev, Jevgeni; Kurnitski, Jarek Energies 2019 / art. 2120, 26 p. : ill <https://doi.org/10.3390/en12112120> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modelling of wax actuators in underfloor heating manifolds

Kull, Tuule Mall; Thalfeldt, Martin; Kurnitski, Jarek E3S Web Conference : Cold Climate HVAC and Energy 2021 2021 / art.

11009, 8 p. : ill <https://doi.org/10.1051/e3sconf/202124611009> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Möödab Tallinna Tehnikaülikool : [õhksoojuspumba tegelikust soojustegurist : Tõnu Kasikovi magistritöö põhjal]

Kodu & Ehitus : TM 2007 / lk. 28-29 : ill

Optimal design and dispatch of electrically driven heat pumps and chillers for a new development area

Pieper, Henrik; Ommen, Torben; Elmegaard, Brian; **Volkova, Anna**; Markussen, Wiebke Brix Environmental and Climate

Technologies 2021 / p. 470-482 : ill <https://doi.org/10.2478/rtuct-2020-0117> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Optimal utilization of rain-water heat in domestic water system of public building

Sergejeva, Monika; Laanearu, Janek CLIMA 2013 : 11th REHVA World Congress and the 8th International Conference on IAQVEC : June 16-19, 2013, Prague Congress Centre, Czech Republic : programme 2013 / p. 114

Optimized energy scheduling of residential DC building: Case of Nordic climate

Sidorova, Aleksandra; Blinov, Andrei; Ahmadihangar, Roya; Vinnikov, Dmitri; Vösa, Karl-Villem; Kurnitski, Jarek 2023

IEEE 17th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2023 / 7 p <https://doi.org/10.1109/CPE-POWERENG58103.2023.10227437>

Otsi säästu igalt rindelt: õige küttesüsteem toob kopsaka rahalise võidu

Raik, Jaan Martin Äripäev 2022 / Lk. 8-9 : fot [Otsi säästu igalt rindelt: õige küttesüsteem toob kopsaka rahalise võidu](https://www.ester.ee/record=b1071975*est)
https://www.ester.ee/record=b1071975*est

Overview of solar photovoltaic applications for district heating and cooling

Sukumaran, Sreenath; Laht, Janika; Volkova, Anna Environmental and Climate Technologies / p. 964-979

<https://doi.org/10.2478/rtuct-2023-0070>

Potential use of underground mine water in heat pumps

Karu, Veiko; Robam, Karin; Valgma, Ingo Estonia. Geographical studies. 11 : on the occasion of the 32nd International Geographical Congress / Estonian Geographical Society 2012 / p. 60-77 : ill

Problems with using the exhaust air heat pump for renovation of ventilation systems in old apartment buildings

Mikola, Alo; Tennokese, Kaspar; Kõiv, Teet-Andrus Danish journal of engineering and applied sciences 2015 / p. 44-55 : ill

<https://doi.org/10.6084/M9.FIGSHARE.1510922>

Properties of thermal probes with heat pipe cooling system

Vrager, Allan; Tiikma, Toomas Advances in heat transfer engineering : proceedings of the Fourth Baltic Heat Transfer Conference : August 25-27, 2003, [Kaunas, Lithuania] 2003 / p. 587-594 : ill

Põrgukuumus: ekspert selgitab, kuidas ruume jahutada

Pärm, Joonas Õhtuleht 2021 / Lk. 2 <https://dea.digar.ee/article/ohutuleht/2021/07/19/2.3>

Residential buildings with heat pumps peak power reduction with high performance insulation

Sarevet, Henri; Fadejev, Jevgeni; Thalfeldt, Martin; Kurnitski, Jarek E3S Web of Conferences : 12th Nordic Symposium on Building Physics (NSB 2020) : Tallinn, Estonia, September 6-9, 2020 2020 / art. 12008, 5 p. : ill

A review on energy piles design, sizing and modelling

Fadejev, Jevgeni; Simson, Raimo; Kurnitski, Jarek; Haghighat, Fariborz Energy 2017 / p. 390-407 : ill
<https://doi.org/10.1016/j.energy.2017.01.097>

Soojuseraatorid : õppematerjal

Paist, Aadu; Poobus, Arvi 2009 https://www.ester.ee/record=b2439255*est

Soojuspump igikeltsa õnneks ei tekita

Mäekalda, Oskar; Kask, Ülo Äripäev 2003 / 30. juuli, lk. 27

Soojuspump, mis see on

Kõiv, Teet-Andrus Ehituskaar 2001 / 7, lk. 16-17 : ill

Soojuspumpade füüsikalistest alustest

Mäeküla, Oskar Elektriala 2004 / 5, lk. 26-27 : ill

Soojuspumpade kasutamisest hoonete soojusvarustuses

Mäeküla, Oskar; Paist, Aadu Energeetika Infoleht / Majandusministeerium 2000 / 3, lk. 11-14 : ill

Soojuspumpade levikust ja kasutamisperspektiividest

Vares, Villu Energiavarustus ja -sääst 1990 / 1, lk. 12-15

System identification models and using neural networks for Ground Source Heat Pump with ground temperature modeling [Electronic resource]

Köse, Ahmet; Petlenkov, Eduard 2016 International Joint Conference on Neural Networks (IJCNN) : 24-29 July 2016, Vancouver, Canada 2016 / p. 2850-2855 : ill. [USB] <https://doi.org/10.1109/IJCNN.2016.7727559>

Taastuvad energiaallikad, turvas, soojuspumbad

Vares, Villu Eesti energeetika 2002 = Estonian energy 2002 2003 / lk. 41-47 : ill

A tabulated sizing method for the early stage design of geothermal energy piles including thermal storage

Ferrantelli, Andrea; Fadejev, Jevgeni; Kurnitski, Jarek Energy and buildings 2020 / art. 110178

<https://doi.org/10.1016/j.enbuild.2020.110178> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Tasuvusaeg 6-8 aastat : [maasoojuspump]

Kõiv, Teet-Andrus Ärielu 2001 / 8, lk. 122

The application of the ground source and air-to-water heat pumps in cold climate areas

Tennokese, Kaspar; Kõiv, Teet-Andrus; Mikola, Alo; Vares, Villu Smart grid and renewable energy 2013 / p. 473-481 : ill

The efficiency analysis of the exhaust air heat pump system

Mikola, Alo; Kõiv, Teet-Andrus Engineering 2014 / p. 1037-1045 : ill

The impact of building renovation with heat pumps to competitiveness of district heating : Estonian district heating pricing system needs more flexibility

Reino, Arbo; Härm, Mihkel; Hamburg, Arvi 2017 IEEE 58th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTU CON) : proceedings : Latvia, Riga, 12-13 October, 2017 2017 / [6] p. : ill
<http://dx.doi.org/10.1109/RTU CON.2017.8124791>

The performance of the ventilation in Estonian retrofitted apartment buildings

Mikola, Alo; Kõiv, Teet-Andrus; Tennokese, Kaspar CLIMA 2016 - proceedings of the 12th REHVA World Congress. Vol. 5 2016 / [10] p. : ill http://vbn.aau.dk/files/233760270/paper_641.pdf

The preliminary research of sea water district heating and cooling for Tallinn coastal area

Hani, Allan; Kõiv, Teet-Andrus Smart grid and renewable energy 2012 / p. 246-252 : ill
https://www.scrip.org/pdf/sgre20120300011_19171139.pdf

The use of heat pump in the renovation of residential buildings

Kõiv, Teet-Andrus; Mikola, Alo Proceedings of the ICENS : Waseda University, Tokyo, Japan, 22-24 July 2015 2015 / p. 193-203

Thermal network simulation of heat pump aggregated energy flexibility

Plaum, Freddy 21st International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Pärnu, Estonia, June 15-18, 2022 2022 / p. 101-102 : ill https://www.ester.ee/record=b5504019*est

Underground water pools as heat source for heat pumps in abandoned oil shale mines in Estonia

Karu, Veiko 10th International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral School of Energy and Geotechnology II : Pärnu, Estonia, January 10-15, 2011 / p. 130-134 : ill

Uuring: Balti riikide looduslikud ja tööstuslikud soojusallikad on alakasutatud

Mente et Manu 2021 / lk. 13 https://www.ester.ee/record=b1242496*est

Vaesust kartmata tuba soojaks: milline on kõige rahasäästlikum viis elektriga kütta?

Väli, Kristjan 2021 / Lk. 4-5 <https://dea.digar.ee/publication/oh tuleht> "Vaesust kartmata tuba soojaks: milline on kõige rahasäästlikum viis elektriga kütta?"

Vaesusut kartmata tuba soojaks: milline on kõige rahasäästlikum viis elektriga kütta?

Väli, Kristjan Õhtuleht.ee 2021 ["Vaesusut kartmata tuba soojaks: milline on kõige rahasäästlikum viis elektriga kütta?"](https://www.ester.ee/record=b5167911*est)

Õhksoojuspump tuleks raha säästmise huvides infrapunapaneelide vastu välja vahetada – muut või tõsilugu?

geenius.ee 2023 [Õhksoojuspump tuleks raha säästmise huvides infrapunapaneelide vastu välja vahetada – muut või tõsilugu?](https://www.ester.ee/record=b5167941*est)

Õhukonditsioneerid, vedelikjahutusseadmed ja soojuspumbad ruumide kütteks ja jahutuseks ning protsessi jahutid elektrikompressoritega. Osa 1, Terminid ja määratlused [Võrguteavik] = Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Part 1, Terms and definitions

2018 https://www.ester.ee/record=b5167911*est

Õhukonditsioneerid, vedelikjahutusseadmed ja soojuspumbad ruumide kütteks ja jahutuseks ning protsessi jahutid elektrikompressoritega. Osa 4, Nõuded [Võrguteavik] = Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Part 4, Requirements

2018 https://www.ester.ee/record=b5167941*est

Õhukonditsioneerid, vesijahutusseadmed ja soojuspumbad ruumide kütteks ja jahutuseks ning protsessi jahutid elektrikompressoritega. Osa 4, Nõuded = Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Part 4, Requirements

2023 https://www.ester.ee/record=b5578149*est