



Dr Nikolai Strodel | Senior Consultant

Integrated energy systems - Heat concepts - Large-scale heat storage systems

Dr Nikolai Strodel's consulting focus at Hamburg Institut is on sustainable heating concepts with a focus on the integration of renewable energies and large-scale heat storage systems. In various projects, which he often leads himself, the engineer deals with innovative heat generation technologies and expert opinions on strategic heat supply. The simulation models developed are adapted for specific applications and used to evaluate sustainable local and district heating systems with high renewable generation shares.

Before joining Hamburg Institut, Dr Nikolai Strodel worked for several years as a research assistant, developing complex models for mapping thermal energy systems. The basic models were further developed in cooperation with engineering offices, energy suppliers and public utilities. His two-year appointment at the Chair of Financing and Finance in Lüneburg enabled him to deepen his business and economic expertise in the field of financing renewable energies.

His expertise and market knowledge, particularly on the subject of large heat storage systems, are also appreciated at overarching levels. Dr Nikolai Strodel is a member of the long-term heat storage working group organised by Solites and the AGFW. This group aims to exchange information and discuss construction methods and system integration of large heat storage systems. He is also a member of the international technology collaboration programme "Energy Storage - Task 45", which deals with accelerating the use of large thermal energy storage systems as part of a multi-year collaboration.

Consulting and research focus

- Studies, consulting and concepts for the heat transition
- Integrated energy systems
- Integration of renewable energies in the heating sector
- Large-scale heat pumps and large-scale heat storage systems
- Economic efficiency of heat supply concepts

Qualification und career

- Since 2019 **Senior consultant and project manager** at Hamburg Institut
- 2017 – 2019 **Research assistant**, Institute for Banking, Finance and Start-up Management (Chair of Financing and Finance), Leuphana University Lüneburg
- 2014 – 2018 **PhD** in the field of sustainability research energy
- 2017 **Certificate course in storage in the smart grid**, University of Freiburg
- 2016 – 2017 **Certificate course in solar heat generation and supply**, University of Freiburg
- 2014 – 2017 **Research Assistant**, Energy Sustainability Research Group, Leuphana University of Lüneburg
- 2006 – 2014 **Graduate engineer**, study of technology management

Projects (selection)

<p>2022 - 2025</p> <p><u>Forschungsprojekt OptInAquiFer</u>: Optimierte Integration thermischer Aquiferspeicher in Fernwärmesysteme</p>	<p>2020</p> <p>Machbarkeitsstudie zur geosolaren Wärme- und Kälteversorgung des Holstenareals mit saisonalem Erdsondenspeicher, Solarabsorbern und Wärmepumpe</p>
<p>2019 - 2020</p> <p>Integration von industrieller Abwärme in das Hamburgische Fernwärmenetz</p> <p><u>Client</u>: Industrieunternehmen</p>	<p>2019</p> <p>Energiekonzept für eine leitungsgebundene Wärmeversorgung eines Neubauquartiers auf Basis Biomethan</p> <p><u>Client</u>: Stadtwerke Neustadt</p>
<p>2018</p> <p>Machbarkeitsstudie zur Nutzung der Abwärme aus Prozessen der ContiTech Ag für die Versorgung von Neubauquartieren</p>	

Studies and publications (selection)

<p>2019 Strodel, N., Opel O., Werner, K.F., Ruck, W.K.L. (2019) Green City — A Sustainable Energy Concept for a Climate Neutral University. In: Palocz-Andresen M., Szalay D., Gosztom A., Sípos L., Taligás T. (eds) International Climate Protection. Springer, Cham</p>	<p>2018 Strodel, N.: Wahrscheinlichkeitsbasierte Energiesystem- und Wirtschaftlichkeitsanalyse eines Aquiferwärmespeichers -Verbesserung der Investitionsplanung durch Erhöhung der Prognosefähigkeit und Prognosegenauigkeit. PhD thesis, Leuphana Universität Lüneburg</p>
<p>2017 Holstenkamp, Lars & Meisel, Marcus & Neidig, Phillip & Opel, Oliver & Steffahn, Jens & Strodel, Nikolai & Lauer, Julian & Vogel, Maud & Degenhart, Heinrich & Michalzik, Dieter & Schomerus, Thomas & Schönebeck, Jörg & Növig, Thor. Interdisciplinary Review of Medium-deep Aquifer Thermal Energy Storage in North Germany. Energy Procedia. 135. 327-336. 10.1016/j.egypro.2017.09.524</p>	<p>2017 Opel, Oliver & Strodel, Nikolai & Werner, Karl & Geffken, Jan & Tribel, Andreea & Ruck, Wolfgang. (2017). Climate-neutral and sustainable campus Leuphana University of Lueneburg. Energy. 10.1016/j.energy.2017.08.039</p>
<p>2017 Holstenkamp, Lars & Lauer, Julian & Neidig, Phillip & Opel, Oliver & Steffahn, Jens & Strodel, Nikolai & Vogel, Maud & Degenhart, Heinrich & Michalzik, Dieter & Schomerus, Thomas & Schönebeck, Jörg & Növig, Thor.: Querschnittstudie Erfolgsfaktoren für mitteltiefe Aquiferwärmespeicher in Norddeutschland. Geothermische Energie. 86. 26 - 27</p>	