

## Green recovery of the Slovak just transition region

This briefing summarises the sustainable energy measures that should be taken for the transformation of Upper Nitra region in the Trenčín administrative area. These measures have the potential to reduce the outflow of money from the region, create jobs and make Upper Nitra a model region for just transition.

### We suggest:

1. The completion and assessment of the project plan for sustainable district heating (DH) in Prievidza.
2. Support for the establishment and operation of a regional centre for sustainable energy in Upper Nitra.
3. The renovation of buildings and distribution lines and the connection of renewable energy sources to the district heating system.



Nováky power plant, photo by Greenpeace, Tomáš Halász

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## I. Completion and assessment of the project plan for a sustainable central heat supply from the Nováky power plant

Slovakia plans to phase out coal energy production at the Nováky power plant by December 2023 at the latest. It is, therefore, necessary to provide heating from a different source for Prievidza, Nováky and Zemianske Kostol'any. In June 2020, the Environmental Impact Assessment for a project to secure heating in the first phase (starting in 2024) by burning natural gas and biomass at the Nováky power plant began.<sup>1</sup> Slovenské elektrárne (SE) plans to build a waste incinerator in the second phase (starting in 2026 or 2029). The Upper Nitra mining company (Hornonitrianske bane – HBP) would like to join SE's plan to heat Prievidza from various energy sources, such as fossil natural gas through a biomass boiler, and heat pumps from mining water (with an optional solar energy source to increase their efficiency). However, Slovenské elektrárne, which owns the supply pipe that provides heat to Prievidza, refuses to cooperate with HBP. HBP, on the other hand, co-owns the heat distribution in Prievidza with the municipality. So, the situation is very complex.

Friends of the Earth – CEPA, along with the independent Austrian expert Bernhard Schneider, developed a modern solution for a central heat supply for Prievidza, Nováky and Zemianske Kostol'any. **This solution prioritises the need to address energy needs primarily through savings in building and distribution pipes and combines renewable energy sources (RES), such as geothermal, solar, heat pumps and biomass, with seasonal heat storage. JASPERS experts deemed our solution very useful for the discussion on how to provide heat the second phase after one post-coal decade ends, albeit requiring some further elaboration.** In order to implement this solution, it is appropriate to use European public funds from the topped-up package for the Just Transition Fund (up to EUR 954 million for the Trenčín and Košice regions). The Modernisation Fund and other EU funds that exist to finance the best available technologies could also finance this solution. Such financing supports the achievement of the Slovak goal for RES, and it does not require the import of fuel from other countries – i.e. the outflow of money from the region.

Upper Nitra is already a good example for central and eastern Europe. The region has also inspired groups in Estonia to start a just transition.<sup>2</sup> However, it is important that we ensure the solutions chosen in Upper Nitra are sustainable. **We want the region to be a showcase for life after coal and not a landfill for hazardous waste from municipal waste incineration.** Moreover, once the region reaches EU recycling targets, there will not be enough waste for the incinerator in the district after 2035.<sup>3</sup> It should

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<sup>1</sup><https://www.enviroportal.sk/sk/eia/detail/transformacia-elektrarne-novaky-novy-zdroj-plynofikacia-plynova-kotoln>

<sup>2</sup><http://www.just-transition.info/slovakia-a-lesson-in-bottom-up-just-transition>

<sup>3</sup><http://zivotpouhli.sk/novinky/item/319-posudok-k-zameru-vybudovania-spalovne-komunalneho-odpadu-v-regione-horna-nitra-zo-strany-slovenskych-elektrarni-as>

also be added that natural gas emissions, including from methane leakage and waste incineration, are comparable to those from coal.<sup>4 5</sup>

### **What is needed?**

1. Complete the project plan for sustainable central heat supply from the Nováky power plant
2. Approve its assessment through JASPERS experts
3. Suggest steps for further implementation of the project plan based on the recommendations of the JASPERS expert team

**Investment need:** Low

## **II. Support for the establishment and operation of a regional centre for sustainable energy in Upper Nitra**

Experts from JASPERS, the Ministry of Economy of the Slovak Republic, the Slovak University of Technology in Bratislava and non-governmental organisations agree on the need to create and support a regional energy policy. In Upper Nitra, we have identified several barriers to the implementation of sustainable energy projects:

- basic data at the local level are missing or outdated;
- there is no job position for regional coordination of the thermal solution;
- there is a lack of power engineers in local governments and financial resources for project preparation.

This leads to low regional support for long-term and ambitious projects that could create sustainable jobs and use European funds to renovate buildings, distribution lines and renewable energy sources.

The solution is to use the allocated funds of EUR 31 million by 2030 to create centres for sustainable energy (CSE), as approved in the National Energy and Climate Plan of the Slovak Republic.<sup>6</sup> The mission of a CSE is to optimise energy needs and energy consumption in a given area and increase the level of energy self-sufficiency based on RES, while strictly respecting environmental sustainability criteria, increasing local control over regional development in the field of energy and thus contributing to Slovakia's commitments to EU climate, energy and environmental policy and at the same time stabilising the local economy.<sup>7</sup>

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<sup>4</sup><https://euractiv.sk/section/energetika/opinion/ochrana-klimy-cez-premena-energetiky-prospeje-hospodarstvu-aj-spolocnosti/>

<sup>5</sup><http://wedocs.unep.org/bitstream/handle/20.500.11822/28413/WTEfull.pdf?sequence=1&isAllowed=y>

<sup>6</sup>National Energy and Climate Plan of the Slovak Republic, Annex 2, <https://rokovania.gov.sk/download.dat?id=C135EAB2C2AC43C4A3D2E0795EA7DB32-BDE05C0D2AF2DFC8D3CC60870DD4BEBB>

<sup>7</sup>Ibid.

## What is needed?

1. Establish a CSE in Prievidza with a priority focus on a sustainable thermal solution
2. Use the support of the Slovak Investment Holding (SIH) in cooperation with the local CSE to prepare documentation for the use of financial instruments for the renovation of buildings
3. Thoroughly map and collect current data on all buildings (public and private) that are connected to DH from ENO in all affected cities – localities, number of buildings connected to DH (or connected but not taking heat from DH), area of buildings, the measured energy consumption of buildings, information on the technical condition of buildings, year of last renovation/partial renovation
4. Prepare an up-to-date map of DH in towns and villages
5. Conduct active information campaigns and communication with the population about the plans in the region
6. Learn about the opinions and problems of residents and take public opinion into account when preparing projects
7. Based on the collected data, analyse the future use and quality of buildings (residential and public), prepare an energy audit of buildings and select a designer/designers
8. Prepare project documentation for the renovation of buildings in DH from ENO (residential and public) and the budget

**Investment need:** Already approved in the National Energy and Climate Plan of the Slovak Republic<sup>8</sup>

### III. The renovation of buildings and distribution lines and the connection of renewable energy sources to the district heating system

The central heat supply system from the Nováky power plant has a great potential for heat savings from the following sources (listed in order of importance):

1. In buildings, heat consumption can be reduced by about 31%, based on a very conservative and quick estimate (for comparison, a high school in Trenčín saw up to a 72% reduction in consumption<sup>9</sup>, and a 74% reduction in consumption was achieved for an apartment building on Pavel Horov Street in Bratislava<sup>10</sup>);
2. Currently, the heating system loses about 12.5% during distribution in the town of Prievidza (total pipe length of 32.7 km);

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<sup>8</sup> Same as above

<sup>9</sup> [https://www.tsk.sk/slovensky/aktualne-spravy/tlacove-spravy/2018/skola-s-najmodernejшими-energetickými-výdobytkami-na-slovensku-prikladom-efektívneho-cerpania-financných-prostriedkov-z-europských-fondov.html?page\\_id=571848](https://www.tsk.sk/slovensky/aktualne-spravy/tlacove-spravy/2018/skola-s-najmodernejшими-energetickými-výdobytkami-na-slovensku-prikladom-efektívneho-cerpania-financných-prostriedkov-z-europských-fondov.html?page_id=571848)

<sup>10</sup> <https://www.pss.sk/casopis-doma/bytovy-dom/najlepsie-obnoveny-bytovy-dom-2015.html>

3. In addition, there is a loss of approximately 14.94% in hot water from the distribution pipe leading from the Nováky power plant to Prievidza (length of 13.2 km).

Renovation of buildings is crucial. Reducing consumption by 1 MWh in buildings in Prievidza will save approximately 1.27 MWh of energy from the ENO source due to losses in distribution and hot water (approximately 27%). JASPERS experts report that the highest average DH efficiency is 90%, which is an industrial benchmark from Finland. We estimate that the Finnish benchmark is approximately 19% more economical than the current DH system in the Upper Nitra region.

In June 2020, experts from the Slovak University of Technology in Bratislava set a relatively conservative savings potential of 31% in 465 buildings connected to the DH system, of which approximately 43% are refurbished and 57% non-refurbished.<sup>11</sup> However, they recommend a thorough mapping and collection of up-to-date data on all buildings. The results of the analysis provided information on buildings in the region for 2020. Based on the results of the analysis of buildings, an estimate was made of the energy, economic and environmental savings potential of these buildings. The standard annual rate of renovation of buildings (3%) is insufficient: at this pace, the renovation of buildings will be achieved in **Nováky in 2042**, in **Zemianske Kostolány in 2040** and in **Prievidza in 2039**. However, if this annual pace was to triple (to 9%), the time of the overall renewal would be significantly shortened: it would be achieved in **Nováky in 2028**, in **Zemianske Kostolány** and in **Prievidza in 2027**.

In addition to speeding up the reduction of energy consumption by increasing the annual pace of renovation (to 9% annually), energy consumption would also stabilise, which is important for the design of new energy sources.

### **What is needed?**

1. Establish a program for the comprehensive renovation of buildings and distribution lines and the use of renewable resources in the region from the Just Transition Fund and the Modernisation Fund. Specifically, funds should go towards:<sup>12</sup>
  - a. **Mitigation measures on/in buildings to achieve the A0 building standard**
    - quantification of energy needs for the operation of buildings (heating, hot water, cooling, ventilation) after the consistent application of the measures proposed in the processed project documentation;
    - determination of the procedure for in-depth renovation of the housing stock connected to DH, which will result in the buildings being restored to a standard with almost zero energy demand (examples are architectural studies

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<sup>11</sup>Source: GOLEJ, Július, PÁNIK, Miroslav: Estimation of the potential of energy savings for heating and hot water preparation of buildings involved in DH from ENO. 2020.

<sup>12</sup>IEPD: Experience from the renovation of apartment buildings in the Bratislava – Karlova Ves district and recommendations for public policies at the national level. 2020. [http://zivotpouhli.sk/images/2020/SKI-mikrostudia-obnova-byt-domy-skusenosti\\_final.pdf](http://zivotpouhli.sk/images/2020/SKI-mikrostudia-obnova-byt-domy-skusenosti_final.pdf)

of Karloveská 57, Pribišova 37, but also a restored and operational apartment building in Bratislava – Devínska Nová Ves on Pavla Horova Street<sup>13</sup>);  
- applying the principles of integrated design with ambitious environmental targets.

b. **Application of adaptation measures at the building level**

The existing buildings are not prepared for climate change, and so far almost no adaptation measures have been applied. Adaptation measures must also be included in the set of required measures that in many cases have a synergistic effect with mitigation measures (e.g. green roofs, green facades, vegetation in the vicinity of the building – these can significantly help to reduce building overheating and thus energy consumption for cooling, rainwater and wastewater management).

c. **Participatory involvement of residents** in the form of personal meetings; a presentation of the goals and benefits of renovation; a questionnaire survey regarding the identification of requirements for, shortcomings of and satisfaction with housing, as well as ideas about the use of courtyards and building surroundings in the case of apartment buildings; etc.

d. **Elaboration of project documentation for the in-depth renovation of buildings to achieve the A0 standard**, determination of energy needs for the operation of individual buildings, residential complexes, neighbourhoods and cities; creation of solar cadastres of cities (documents that show the solar photovoltaic and/or thermal potential of certain areas of the city or specific buildings, provide an indicative estimate of possible solar gains, and thus encourage the use of RES); and the involvement of urban planners in promoting the creation of land use plans with regard to using RES, especially solar energy.

e. **Extension of funding to support project documentation for local governments and other applicants** interested in the comprehensive renovation of buildings and the use of renewable energy sources.

Note: For municipalities, the biggest problem is not the financing of project documentation, but the uncertainty as to whether the relevant call for proposals will follow.

f. **Similar systems of residential houses – especially if they are neighbouring – to be renovated simultaneously and in a coordinated and comprehensive manner and a unified style**, as is customary in developed EU countries.

2. Enable **companies with a fossil portfolio to finance** projects from public sources **only under the condition that they publicly submit a binding decarbonisation plan**

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<sup>13</sup><https://www.pss.sk/casopis-doma/bytovy-dom/najlepsie-obnoveny-bytovy-dom-2015.html>

3. **Create retraining programs and transform dual education** in the region to meet the needs of the comprehensive building renovation program and other relevant technical measures

**Investment need:** EUR 71 million for the refurbishment of buildings connected to the district heating network

**Reduction of CO2 emissions:** 50,200 tons of greenhouse gas emissions from the refurbishment of buildings connected to DH ENO

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