BioVill

Increasing the Market Uptake of Sustainable Bioenergy

A bioenergy concept for a settlement in the Macedonian Municipality of Kichevo

Final International Conference
of the EU H2020 Projects BioVill and CoolHeating

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Tino Aleksov, Municipality of Kichevo

Ljupcho Dimov, Municipality of Karposh

Vasil Bozhikaliev, SDEWES-Skopje

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Introduction

The target village (community) of the BioVill project in Macedonia is the municipality of Kichevo. The bioenergy village concept has been developed for the small and densely populated settlement Lozhionica.

- Three phases: (1) public buildings, (2) older and (3) newer residential buildings
- Technical part: biomass DH system – woodchip fueled boilers and a distribution grid
- Fuel: woodchips from local forest residues, sufficient for the 3-phase heat demand
- Producers and suppliers: the regional forest service and forest concessionaires
- Business model:
  - Subsector in the municipality from personnel who maintain individual systems
  - Public enterprise needed for the second and third phase
- Awareness raising and capacity building activities: info-days, info-point, meetings of the working group, dialogues with politicians, survey, trainings, etc.
- Still to come: National conference, Letter of Commitment with the key actors

Three-phase scheme of the bioenergy project in Kichevo

Phase 1 (red): 4 public buildings (3 schools and 1 kindergarten)

Phase 2 (green): 7 older residential buildings (240 households)

Phase 3 (blue): 2 newer residential buildings (40 households)

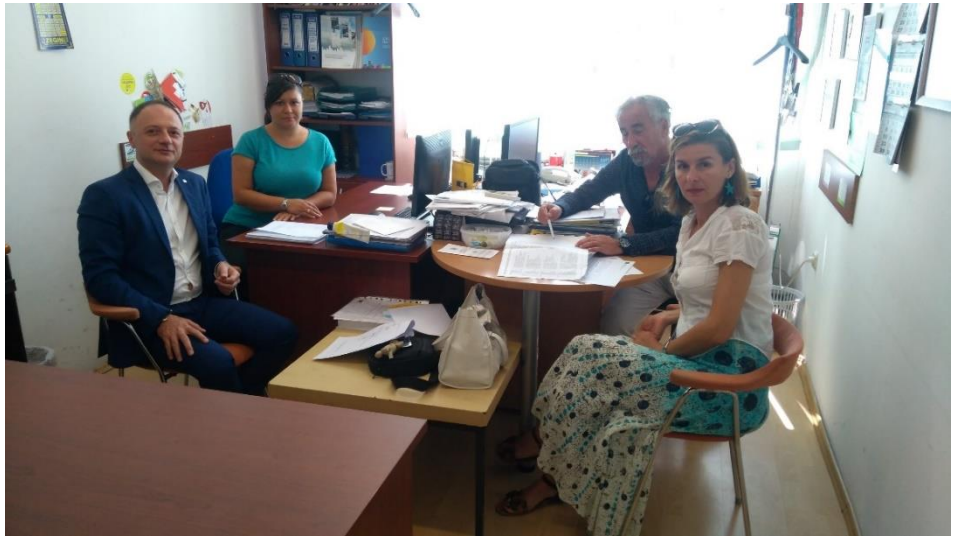
Main reasons why this idea should be supported and replicated in other communities

1. Sustainable development of the local community, resolving the heating problems and increasing the comfort in the buildings
2. Additional share of renewable bioenergy in Kichevo's final energy consumption of 8%
3. Annual greenhouse gases emission reduction of 3,342 CO_2-eq compared to a fossil fueled system
4. Saving of total costs of about 40% compared to a fossil fueled system
5. Revenues for the system operator and woodchip suppliers while keeping the money in the local community and boosting local economic growth
6. Jobs creation potential of up to 5 direct, 5 indirect and 3 induced jobs along the new value chain

5 steps to investment stage

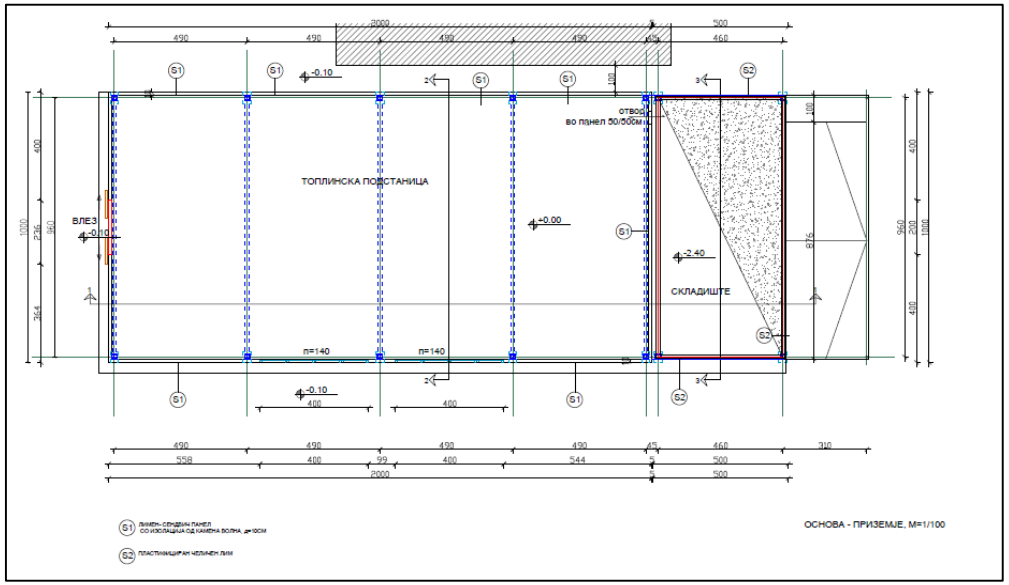
The SDEWES-Skopje team and the experts in the municipality of Kichevo, with the support of the mayor, continued the activities that will enable the practical realization of the project, starting from the first phase:

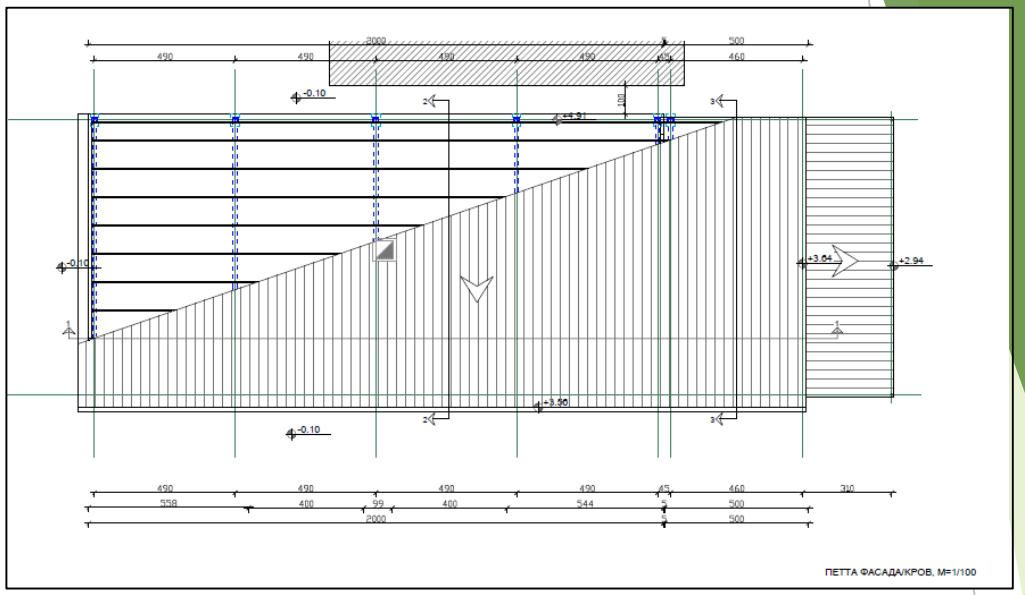
1. In cooperation with REHAU Macedonia and the design house Dominus, preliminary designs for the boiler and storage room were made, and the distribution grid from the DH plant to the final consumers was also dimensioned.

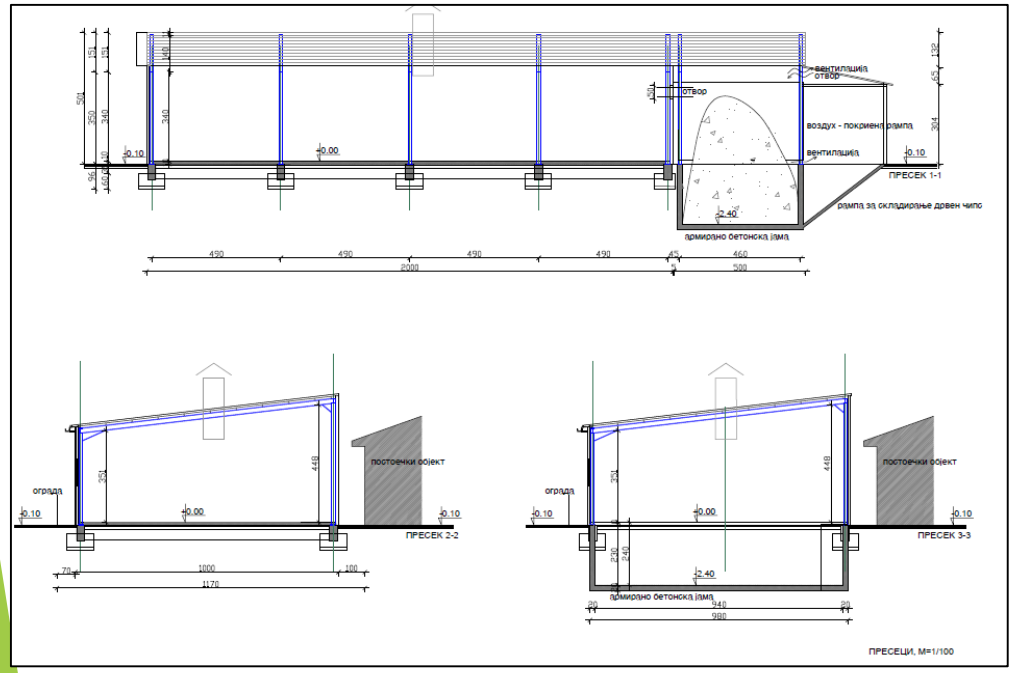


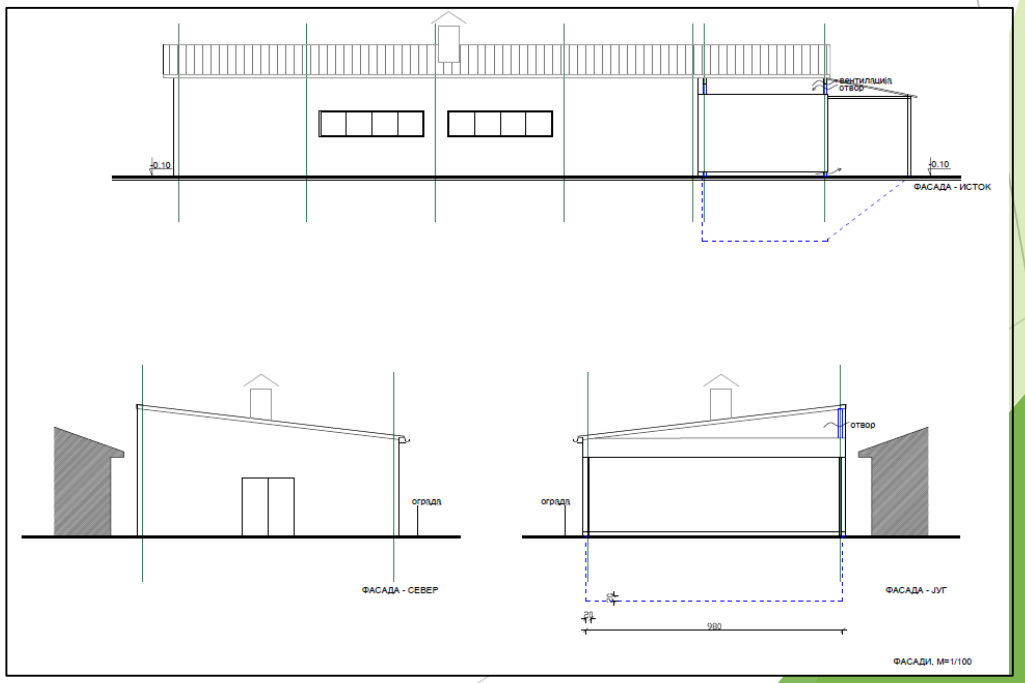
Working group meeting for project designs

Boiler and storage room design









5 steps to investment stage

2. The SDEWES-Skopje team met with a representative of the World Bank in Macedonia to ask for support in composing an application for funding. A loan of 700,000 EUR for realization of the first phase of the project (1 MW; 1,220 m) was requested.

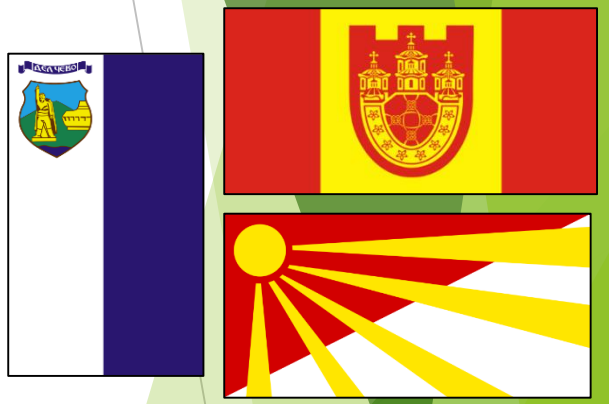
Working group meeting with a World Bank representative

5 steps to investment stage

3. At the moment, a positive outcome is expected from the application process, and even more so from the possibility that part of the requested funds could be in the form of a grant.
4. In the next period, the preparation and signing of an agreement between the mayor and the World Bank should follow, which should enable the realization of the first phase of the project already in 2019.
5. The heating season in 2019/2020 is anticipated to begin with operation of the first phase, paving the way for further realization of the second and third phase.

Conclusion

- The BioVill project has opened new perspectives on the use of waste biomass in Macedonia, which has not been sufficiently utilized as a renewable energy source.
- The interest among the Kichevo's follower communities in the project, Kriva Palanka, Delchevo and Chashka, is high and resulted in discussing opportunities for similar concepts in these communities led by the example of Kichevo.
- The SDEWES-Skopje team is available to the follower communities for the development of technical solutions and the transfer of experiences from all participating countries in the BioVill project.



Thank you for your attention.
Ви благодариме за вниманието.