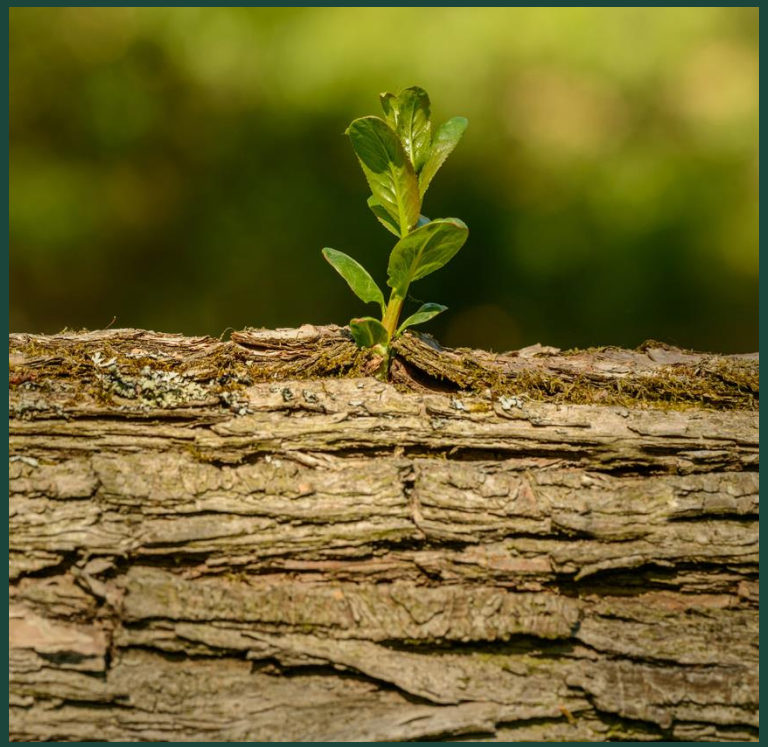
CULTIVATION OF ENERGY WILLOW ON MARGINAL LANDS



Relevance and essence of the project.

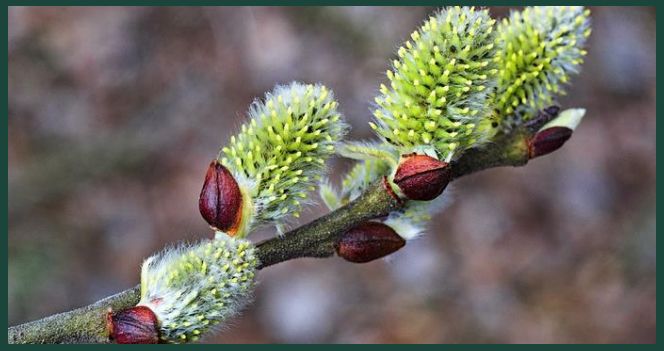
From the first day of the full-scale invasion of the Russian Federation, Ukrainian energy became one of the main goals of the aggressor country. Large-scale shelling and destruction of the energy infrastructure forced Ukrainians to look for alternatives for uninterrupted power supply and heating of buildings. In addition, over the past two years, the cost of natural gas has increased significantly for institutions and organizations financed from the state and local budgets. The combination of these factors in communities brought the issue of energy independence to the fore.

The problem of marginal lands

Marginal lands are lands on which the cultivation of traditional agricultural crops (food or fodder) is impossible or economically impractical due to low soil fertility, unfavorable climatic conditions, environmental, economic or social risks. Among the marginal lands, the most common in Ukraine are unproductive and man-made polluted lands, overmoistened or arid lands, eroded lands, and lands with high or low acidity.

Advantages of growing energy willow:

- replaces imported energy carriers;
- improves the state's trade balance;
- creates jobs;
- has a low ash content;
- has a significant potential to replace natural gas;
- creates a guaranteed and predictable source of biofuel;
- reduces greenhouse gas emissions (they are CO_2 neutral (in the process of growing energy crops, the same amount of CO_2 that is released during its burning is absorbed);
- develops the local economy;
- has a significant potential of free land for cultivation;
- is successfully grown on sandy soils, silty and loamy soils;
- acts as a solar energy accumulator;
- herbicides and other agrochemicals are not used during cultivation;
- energy plantations prevent soil erosion, improve ecology;
- from 1 ha of willow plantation, 60-80% of nutrients return to the soil together with fallen leaves;
- after the 8th harvest, in the 25th year, the land that was unsuitable for growing agricultural crops before, in its main mass, becomes suitable for agriculture;



- removal of heavy metals from contaminated land and wastewater treatment;
- shore fortification;
- ash after burning willow is used as one of the best
- mineral fertilizers;
- the base 1 ha of energy willow plantation yields 150-180 m3 of raw material during a three-year harvest cycle, which can replace 13.5 thousand m3 of natural gas.

Виконавці:

Alina Korobko (Doctor of Philosophy in Agronomy)

Volodymyr Yakovets (postgraduate)

Vadim Manilko (student)

Oleksii Ohnyvyi (student)