

# AN INTEGRATED FOOD-ENERGY SYSTEM (IFES) CONCEPT FOR CLIMATE-SMART AGRICULTURE

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## CORRESPONDING MODULE 1

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### Introduction

Agrivoltaics,  
agrophotovoltaics,



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optimizing crop yield,  
crop quality, and  
energy production.  
However, in some  
cases crop yield  
increases due to the



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shade of the solar panels mitigating some of the stress on plants caused by high temperatures and UV damage.

### **Agrivoltaics is agriculture the future**

**Agrovoltaics** works on dual use soil. On one hand, it manages and produces electric energy. Photovoltaic panels are installed so that crops have enough light.

A new one is being prepared in the Czech Republic. The Protection Act agricultural of the land fund so far counts only with permanent installations – cultures, meadows and arable soil. Agrivoltaics are not suitable for light lovers like rapeseed, on the contrary, potatoes according to studies have relatively low claims.

At the beginning of 2023, the first agrivoltaic power plant (AGV) with an output of 0.9 MWp will be built in the Czech Republic. The project will be created with the participation of scientific experts from the Mendelian University in Brno and a private investor on an industrial plot in order to test various technologies in real operation.

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Source: <https://www.denik.cz/ekonomika/agrivoltaika-vyroba-energie.html>

According to Abel, the farmer can Thanks agrivoltaic reduce energy costs, benefits \_ however he sees more like \_ climate adaptation \_ change - lower vapor and better maintenance moisture under the installation, protection before sharp sun, spring freezers whose summer ones hail.

The primary role of farmers is to produce food, and agrivoltaics can help them fulfill this role by allowing them to use agricultural land for both food





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production and sustainable electricity  
production.

Jan Doležal, president of the Agrarian Chamber of the Czech Republic

## Challenges:

- an opportunity to increase the income of Czech farmers and at the same time strengthens the ambition on the way to the energy self-sufficiency of the Czech Republic
- its place from the point of view of protecting the most valuable soil in agriculture is taken above permanent cultures - on hop farms, orchards or vineyards

## Agrovoltaics

Dual use land for agriculture and energy and the concept production clean energy. Thanks photovoltaic panels on the floor without loss her main function - production food.

The concept has been tested in Germany, the Netherlands and France. The Czech Republic waits for pilot projects during the next few months, the first can arise in 2023.

State yet supports concept on hops, fruit trees Orchards whose vineyards. Supporters they want enabling even on meadows and in suitable one's crops on arable land.

Solar panels they have at drought reduce vapor, also serves as protection before weather conditions influences - sharp the sun

## Further Information

<https://www.denik.cz/ekonomika/agrivoltaika-vyroba-energie.html>

<https://www.solarninovinky.cz/v-cesku-vznikne-prvni-velka-agrivoltaicka-instalace-jake-jsou-vyhody-a-nevyhody-teto-technologie-v-praxi/>



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whose spring one's freezers. Vertically installation modules they can work like windbreaks.

Typical agrivoltaic the system consists of ground solar fields with crops planted either under or between rows solar panels. You can be installed on the brackets in sufficient height to allow passage agricultural techniques (roughly 4 meters), or vertically in rows.

is ideal if it is in the immediate vicinity proximity installation distribution system electrical energy whose big subscription fee place, perhaps even a supermarket or cleaner of wastewater.

[https://  
www.agromanual.cz/  
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agrivoltaika-v-  
podminkach-ceske-  
republiky](https://www.agromanual.cz/cz/clanky/management-a-legislativa/management/agrivoltaika-v-podminkach-ceske-republiky)



## ANNEX - STRUCTURE OF MODULE CONTENT TO PREPARE SLIDES

<b>Module Name:</b> <b>The name of the partner:</b> <b>Country:</b>
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<b>The name of the module</b>	
<b>Target group involved</b>	
<b>Current information about the topic</b>	
<b>Principles of the specific module</b>	
<b>Basic terms/measures of the module/topic</b>	
<b>Training materials (tasks, case studies, exercises)</b>	
<b>Short description of the materials</b>	
<b>Link of the online resources (film or video resources)</b>	
<b>Specific images (to support the purpose of the resources)</b>	
<b>Duration</b>	
<b>Materials</b>	
<b>No of Learners/Representatives</b>	
<b>Individual or group work</b>	
<b>Step by step guide</b>	

