



BEFS

Bioenergy and Food Security

Інструмент для оцінки біоенергетичних проектів та продовольчої безпеки BEFS OLT (побічні продукти с/г)

ВИКОРИСТАННЯ ІНСТРУМЕНТУ

Київ, 5-6 липня 2016 р.



Послідовність виконання оцінки



Вибір ланцюжка виробництва енергії

BEFS Operator Level Tool

The following surveys are available:

- Crop residues
- Livestock residues

Please contact Krešimir Vrhovčak (kresimir.vrhovcak@fao.hr) for further assistance.



Thank you for using the Operator Level Tool (Agriculture residues) V0.1
We welcome comments, questions, and feedback at kresimir.vrhovcak@fao.org



Вибрано ланцюжок виробництва енергії з пожнивних решток (Crop residues)

Crop residues

Dear assessor,

This is Bioenergy Food Safety Operator Level Tool (Agriculture Residues) assessment. The goal of the operator level tool (OLT) is to assist in environmental, social and economic assessment of bioenergy projects. Please send comments to kresimir.vrhovcak@fao.org

Detail information about assesment you can find on url <http://oltm.informel.hr>.



Food and Agriculture Organization
of the United Nations

There are 285 questions in this survey.

Next

Повернення до
попереднього набору
питань

Перехід до наступного
набору питань



Збереження результатів для можливості
продовжити пізніше

Збережіть ваші результати!



BEFS

Save your unfinished survey

Enter a name and password for this survey and click save below.

Your survey will be saved using that name and password, and can be completed later by logging in with the same name and password.

If you give an email address, an email containing the details will be sent to you.

After having clicked the save button you can either close this browser window or continue filling out the survey:

Name:	CR_V1
Password:	*****
Repeat password:	*****
Your email address:	zfistrek@eihp.hr
Save now	
Return to survey	



Thank you for using the Operator Level Tool (Agriculture residues) V0.1
We welcome comments, questions, and feedback at kresimir.vrhovcak@fao.org

Вихідні питання

- Вибір ланцюжка виробництва енергії з біомаси
- Фаза проекту (в розробці, діючий)
- Наявні документи (ТЕО, ОВОС, ...)
- Інформація про розробника проекту
- Опис проекту (сировина, розташування, склади, збір, транспортування, використання,...)

Точне місце розташування, координати,
тип проекту, сировина і т.п.

DEVELOPED BY: ENAGRO Ltd

PROJECT DESCRIPTION AND LOCATION

[IQProjectName]

* Project name

Straw-fired CHP plant at the location of ENAGRO Ltd.

 Full name of the project

[IQProjectType]

Type of project

CHP plant using wheat straw

 e.g. CHP plant using cereal straw

[IQFeedstockUsed]

Feedstock used

Feedstock 1

Wheat straw

Feedstock 2

PROJECT: **Straw-fired CHP plant at the location of ENAGRO Ltd.**
DEVELOPED BY: **ENAGRO Ltd**

FEEDSTOCK AND PROJECT COMPONENTS

[LocationOnMap]

* Project location on map (please fine tune location on map by moving red point, to trigger country resolving)

45.8319857948866 17.391815185546875

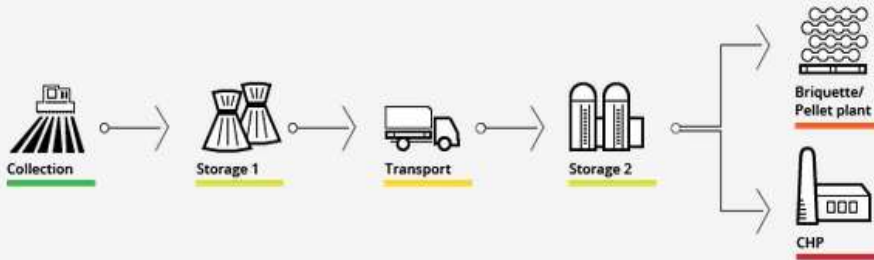


Drag and drop the pin to the desired location. You may also right click on the map to move the pin.

[IQCRComponents]

*

Which project/component would you like to assess?



Складові ланцюжка
виробництва енергії з
пожнивних решток

Check any that apply

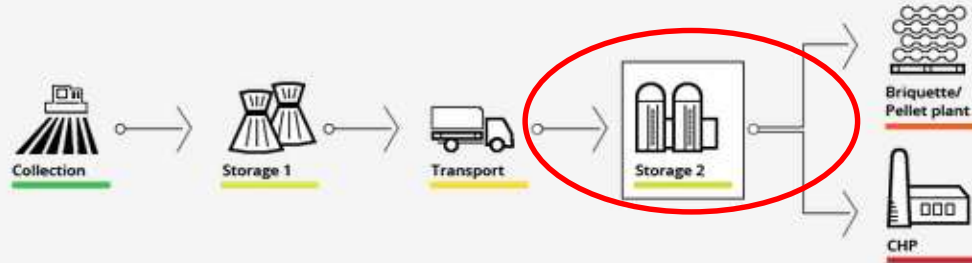
- ☐ Crop residue collection
- ☐ Storage at the collection area
- ☐ Transport
- ☒ Storage at pellet, briquette or combined heat and power (CHP) plant site
- ☐ Pellet or briquette plant
- ☒ Combined heat and power (CHP) plant

Вибір складових – можна вибрати всі
або тільки окремі складові

Компонента: склад II – Вихідні питання

PROJECT: Straw-fired CHP plant within poultry farm.
DEVELOPED BY: Bioenergy Ltd.

 CROPS  DEVELOPMENT

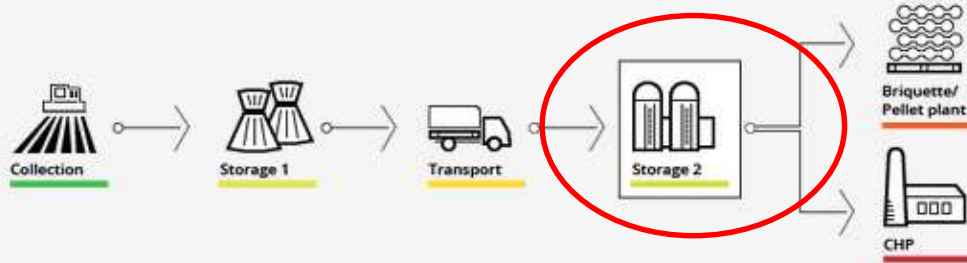


CROP RESIDUES STORAGE AT PELLET, BRIQUETTE OR COMBINED HEAT AND POWER (CHP) PLANT SITE,
INITIAL QUESTIONS

Компонента: склад II- Показники

PROJECT: Straw-fired CHP plant within poultry farm,
DEVELOPED BY: Bioenergy Ltd.

 CROPS  DEVELOPMENT



CROP RESIDUES STORAGE AT PELLET, BRIQUETTE OR COMBINED HEAT AND POWER (CHP) PLANT SITE, INDICATORS

Екологічні показники

- Атмосфера (емісія парникових газів, якість повітря)
- Водні ресурси (використання води, якість води)
- Біорізноманіття
- Ґрунтово-рослинний покрив земель / Землекористування
- Ґрунт
- Відходи
- Енергоефективність
- Ефективність використання матеріалів
- Шум

Атмосфера – якість повітря (емісія пилу)



Atmosphere
Air quality

What is the type of storage facility?

Choose one of the following answers

☒ Open storage

☐ Closed storage

[About indicator](#)

[IndCRS2EPractices]

*

Which measures are implemented that effectively abate dust emissions?

Check any that apply

☒ Water mist dispersion systems used to control dust emissions

☒ Feedstock fully covered

☐ Other (please specify)

[About indicator](#)

[IndCRS2AEPRegulation]

* Are air emission practices in line with the relevant regulations and permit?

☒ Yes

☐ No

Тип питань:

- Необов'язкові
- Обов'язкові

Crop residues

PROJECT: Straw-fired CHP plant within poultry farm.
DEVELOPED BY: Bioenergy Ltd.

 CROPS  DEVELOPMENT

One or more mandatory questions have not been answered. You cannot proceed until these have been completed.

OK

CROP RESIDUES, COMBINED HEAT AND POWER (CHP) PLANT, INDICATORS

[IndCRCHPREShare]

*

Atmosphere

GHG emissions

What share of the plant energy consumption is from the renewable energy the plant produces?

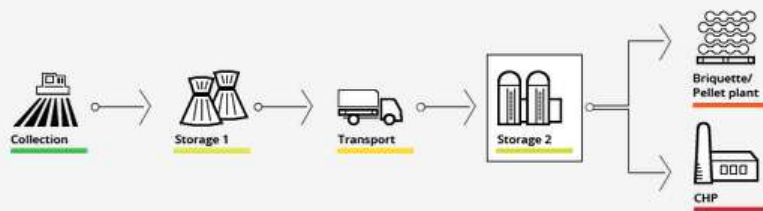
Choose one of the following answers

Якщо на якісь обов'язкові питання не буде надано відповідь, на екрані про це з'явиться відповідне повідомлення, і користувач не зможе продовжити оцінку, доки не надасть відповіді на всі обов'язкові питання.

Якщо хоча б один показник оцінено як неприйнятний,
весь проект оцінюється як неприйнятний!

PROJECT: Straw-fired CHP plant within poultry farm,
DEVELOPED BY: Bioenergy Ltd.

CROPS DEVELOPMENT



CROP RESIDUES STORAGE AT PELLET, BRIQUETTE OR COMBINED HEAT AND POWER (CHP) PLANT SITE, RESULTS

[ResCRS2Display]

Final: Not acceptable

	Atmosphere	Water	Biodiversity	Land	Waste	Energy efficiency	Noise	Total
Excellent	0	0	1	0	0	0	1	2
Moderate	1	0	0	1	0	0	0	2
Poor	0	0	0	0	0	0	0	0
Non acceptable	0	1	0	0	0	0	0	1
Non applicable	0	0	0	0	2	1	0	3
Data not available	0	0	0	0	0	0	0	0
Total	1	1	1	1	2	1	1	8

Складова: ТЕЦ – Вихідні питання

PROJECT: Straw-fired CHP plant within poultry farm.
DEVELOPED BY: Bioenergy Ltd.

 CROPS  DEVELOPMENT



► CROP RESIDUES, COMBINED HEAT AND POWER (CHP) PLANT, INITIAL QUESTION

Складова: ТЕЦ – Показники

PROJECT: Straw-fired CHP plant within poultry farm.
DEVELOPED BY: Bioenergy Ltd.



CROPS



DEVELOPMENT



CROP RESIDUES, COMBINED HEAT AND POWER (CHP) PLANT, INDICATORS

РЕЗУЛЬТАТИ



BEFS

Crop residues

PROJECT: Straw-fired CHP plant within poultry farm
DEVELOPED BY: Bioenergy Ltd.

CROPS DEVELOPMENT



CROP RESIDUES, COMBINED HEAT AND POWER (CHP) PLANT, RESULTS

[BIOCHPDisplay]

Final: Moderate

	Atmosphere	Water	Biodiversity	Land	Waste	Electrical energy	Noise	Total
Excellent	3	2	1	2	0	1	0	9
Moderate	1	1	0	0	0	0	2	4
Poor	0	1	0	0	0	1	0	2
Non acceptable	0	0	0	0	0	0	0	0
Non applicable	0	1	0	0	1	0	0	2
Data not available	0	1	0	0	2	0	0	3
Total	4	6	1	2	3	2	2	20

Соціальні та економічні показники

- Оцінка і управління соціальними впливами та наслідками
- Умови праці
- Охорона праці та техніка безпеки
- Купівля землі, вимушене переселення та економічне переміщення
- Корінні жителі
- Культурна спадщина
- Оприлюднення інформації, спілкування із зацікавленими сторонами
- Використання сировини
- Управління ризиками



SOCIAL ASSESSMENT INITIAL QUESTIONS

[IQSocInsurCaverage]

Please outline the nature and level of coverage of the organisation's insurance provisions in relation to environmental and social coverage

Equipment damage insurance, worker insurance, timely delivery insurance and performance insurance

[IQSocDisplacement]

* Is there an unavoidable displacement of income generating and subsistence activities, namely subsistence farming, sale of goods and services, wage employment, land lease contract?

☐ Yes

☒ No

[IQSocPlannedBudgets]

Does the company have management plans and resources for any of the followings and are these action plans budgeted? (choose all that apply and write out the planned budget)?

Check any that apply

☒ Comment only when you choose an answer.

☒ Positive number, max 2 decimal places

☐ Yes, for Human Resources Management (€):

Crop residues

PROJECT: Straw-fired CHP plant within poultry farm.
DEVELOPED BY: Bioenergy Ltd.



CROPS



DEVELOPMENT



SOCIAL INDICATORS

[IndSocInsurance]

*

Assessment and management of social impacts and issues

Does the company have insurance provisions for environmental and social coverage?

Choose one of the following answers:

 If you choose  **Non applicable** please also specify your choice in the accompanying text field.

- ☒  **Yes, the company has insurance provisions for BEFS coverage**
- ☐  **No, the company has no insurance provisions covering environmental and social coverage**
- ☐  **Data not available**
- ☐  **Non applicable**

 [About indicator](#)

[IndSocManagementSys]

* Has the company established a Social Management System?

Choose one of the following answers:

 If you choose  **Non applicable** please also specify your choice in the accompanying text field.

- ☐  **Yes**
- ☒  **No**
- ☐  **Data not available**
- ☐  **Non applicable**

РЕЗУЛЬТАТИ

Crop residues

PROJECT: Straw-fired CHP plant within poultry farm
DEVELOPED BY: Bioenergy Ltd.



LIVESTOCK



DEVELOPMENT



SOCIAL INDICATORS, RESULTS

[ResSocDisplay]

Final:  Excellent

	Impact	Labour	Health	Land	Info	Feedstock	Total
 Excellent	1	4	10	4	4	2	24
 Moderate	1	3	3	2	2	0	12
 Poor	1	0	1	0	1	0	3
 Non acceptable	0	0	0	0	0	0	0
 Non applicable	0	0	2	0	0	0	2
 Data not available	0	0	0	0	0	0	0
Total	3	7	16	6	7	2	41

Crop residues

PROJECT: Straw-fired CHP plant within poultry farm
DEVELOPED BY: Bioenergy Ltd.



ECONOMIC ASSESSMENT INITIAL QUESTIONS

[IQEcoProjectDev]

Description of the project

Project developer (for at least previous three years)

Net Income

Break-even point

Net cash flow

[IQEcoProject]

Project

CAPEX

OPEX

IRR

NPV

Payback time

Net income, Net cash flow, CAPEX, OPEX, IRR, NPV, Payback time.....

Чистий дохід, чистий грошовий потік, капітальні витрати, операційні витрати, внутрішня норма рентабельності, чиста поточна вартість, термін окупності...

ECONOMIC INDICATORS

[LandEroFeedstockSupply]

*

How is long-term and sustainable feedstock supply ensured?

Choose one of the following answers

 If you choose  **Non applicable** please also specify your choice in the accompanying text field.

- ☒  There is a long-term contract (for 1 year up to an entire project duration), with fixed price for at least one year
- ☐  There is a medium-term contract (for 1 year), with fixed price
- ☐  There is a short term contract ,less than one year, or there is a longer-term contract but the price is not fixed (not even for a few months ahead)
- ☐  There is no contract
- ☐  Data not available
- ☐  Non applicable

 [About indicator](#)

Приклад: Якими заходами гарантується довгострокове й стале постачання сировини ?

РЕЗУЛЬТАТ

PROJECT: Straw-fired CHP plant within poultry farm.
DEVELOPED BY: Bioenergy Ltd.

CROPS DEVELOPMENT



ECONOMIC INDICATORS, RESULTS

[ResEcoDisplay]

Final: Excellent

Excellent

1

Moderate

1

Poor

0

Non acceptable

0

Non applicable

0

Data not available

Total

Previous

Submit

Resume later

Exit and clear survey



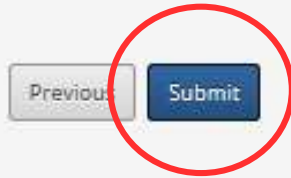
Thank you for using the Operator Level Tool (Agriculture residues) V0.1
We welcome comments, questions, and feedback at kresimir.vrhovcak@fao.org

На цій стадії можна подати відповіді (submit) й «згенерувати» звіт

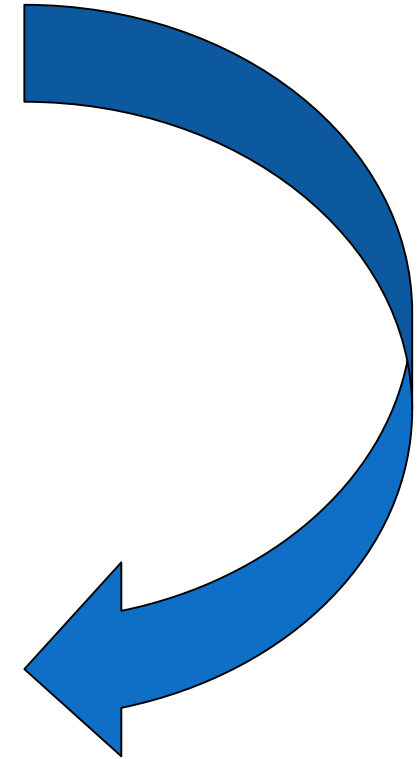
Після подання відповідей (submit) вже неможливо повернутися назад до оцінки, бо інформацію видалено!



BEFS



ЗВІТ



Інтерпретація результатів

Формат звіту

PROJECT

NAME: Straw-fired CHP plant at the location of ENAGRO Ltd.

PHASE: Development



DEVELOPER

ENAGRO Ltd

01 6040 588

enagro@com.hr

ASSESSOR

Name: B.K.

Assessment date: 2016-05-11 00:00:00.0

Assessor institution: ENAGRO Ltd.

Contact details:

Address: Savska cesta 163, Zagreb, Croatia

Phone: 01 6040 588

Email: enagro@com.hr

PROJECT DEVELOPER

Name: ENAGRO Ltd

Country: Croatia

Contact details:

Address: Savska cesta 163, Zagreb, Croatia

Phone: enagro@com.hr

Email: 01 6040 588

DESCRIPTION OF THE PROJECT

Project name: Straw-fired CHP plant at the location of ENAGRO Ltd.

Project type: CHP plant using wheat straw

Feedstock used: Wheat straw

Project is in Development/Operation? Development

Feasibility study prepared? Yes

Will the project encompass implementation of the Environmental and Social Management System? Yes

LOCATION

City/Village: Virovitica

Coordinates: Longitude: 45.8319857948866 Latitude: 17.391815185546875

(Link)

Is the project in line with the relevant spatial development plans? Yes

Environmental Impact Assessment required? No

Environmental Impact Assessment conducted? No



Формат звіту

BEFS

OPERATOR LEVEL TOOL (AGRICULTURAL RESIDUES)

PROJECT
 NAME: Straw-fired CHP plant within poultry farm
 PHASE: Development

INITIAL QUESTIONS
DEVELOPER
 ENAGRO Ltd.
 01 6040 588
 enagro@com.hr

ASSESSMENT OVERVIEW

Показник «зрілості» проекту

Sustainability pillar			
	Environmental	Social	Economic
Performance	Moderate	Excellent	Excellent
Total: Excellent			

No data available (%): 6

Відсоток «якості» проекту по кожній групі показників



Формат звіту


BEFS OPERATOR LEVEL TOOL (AGRICULTURAL RESIDUES)

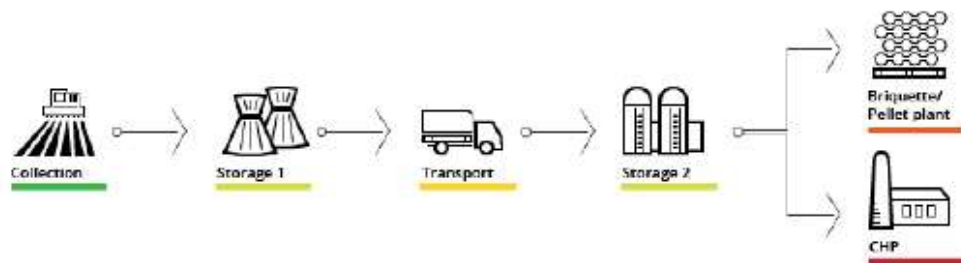
PROJECT
 NAME: Straw-fired CHP plant within poultry farm
 PHASE: Development




INITIAL QUESTIONS

DEVELOPER
 ENAGRO Ltd.
 01 6040 588
 enagro@com.hr

ASSESSED COMPONENTS



	COMPONENT	ASSESSED	TOTAL
	Crop residue collection	No	
	Storage at the collection area	No	
	Transport	No	
	Storage at pellet, briquette or combined heat and power	Yes	
	Pellet or briquette plant	No	
	Combined heat and power (CHP) plant	Yes	

Формат звіту


BEFS OPERATOR LEVEL TOOL (AGRICULTURAL RESIDUES)

PROJECT
 NAME: Straw-fired CHP plant within poultry farm
 PHASE: Development




INITIAL QUESTIONS
DEVELOPER
 ENAGRO Ltd.
 01 6040 598
 enagro@com.hr

SCORES OVERVIEW

ENVIRONMENTAL INDICATORS		ATMOSPHERE	WATER	BIODIVERSITY	LAND COVER / LAND USE	SOIL	WASTE	ENERGY EFFICIENCY	NOISE	TOTAL
	COLLECTION									
	STORAGE 1									
	TRANSPORT									
	STORAGE 2									
	CONVERSION									
	CHP									
	TOTAL									
SOCIAL INDICATORS				IMPACT	LABOUR	HEALTH	LAND	INFO	FEEDSTOCK	TOTAL
	PROJECT									
ECONOMIC INDICATORS									RISK MANAGEMENT	TOTAL
	PROJECT									



BEFS

Формат звіту

 BEFS OPERATOR LEVEL TOOL (AGRICULTURAL RESIDUES)		INITIAL QUESTIONS	
PROJECT		DEVELOPER	
NAME: Straw-fired CHP plant at the location of ENAGRO Ltd.		ENAGRO Ltd	
PHASE: Development		01 6040 588	
 		enagro@com.hr	
 LIST OF NOT ACCEPTABLE			

Формат звіту


BEFS OPERATOR LEVEL TOOL (AGRICULTURAL RESIDUES)

INITIAL QUESTIONS

PROJECT
 NAME: Straw-fired CHP plant at the location of ENAGRO Ltd.
 PHASE: Development

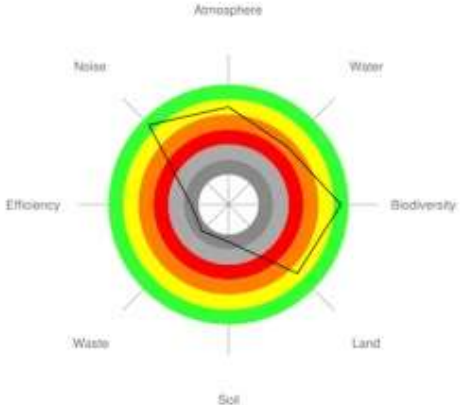
DEVELOPER
 ENAGRO Ltd
 01 6040 588
 enagro@com.hr




STORAGE 2

Total storage capacity (t): 2500
 Area occupied by the storage (m): 1600
 Type of feedstock stored: Wheat straw
 Material used for cover: Tarpaulin
 Building material used: /
 Number of feedstock suppliers: 5
 Feedstock country and region of origin: Croatia

	ATMOSPHERE	WATER	BIODIVERSITY	LAND COVER / LAND USE	SOIL	WASTE	ENERGY EFFICIENCY	NOISE	TOTAL
STORAGE 2	+	-	+	+		Q	Q	+	+



+	Excellent	2
+	Moderate	2
-	Poor	1
⊘	Not acceptable	0
⊗	Data not available	3
⊗	Non applicable	0
	Total	8

ASSESSMENT RESULT:
 + Moderate



BEFS

Формат звіту



BEFS

PROJECT

NAME: Straw-fired CHP plant at the location of ENAGRO Ltd.

PHASE: Development



DEVELOPER

ENAGRO Ltd

01 6040 588

enagro@com.hr

PROJECT

NAME: Straw-fired CHP plant at the location of ENAGRO Ltd.

PHASE: Development



DEVELOPER

ENAGRO Ltd

01 6040 588

enagro@com.hr

CHP - INITIAL QUESTIONS

Technology used: Steam boiler - grate firing, steam turbine and generator

Power capacity: 0.5000000000 MWe

Heat capacity: 1.3000000000 MWt

Unit: MWh

Power generation: 3000MWh/year

Heat production: 7800 MWh/year

FEEDSTOCK

	Type of feedstock	Quantity of feedstock	Share of a feedstock type
Feedstock 1	Wheat straw	2500	100
Feedstock 2			
Feedstock 3			
Feedstock 4			
Feedstock 5			

Number of feedstock suppliers: 5

Feedstock country and region of origin: Croatia

How is long-term and sustainable feedstock supply ensured? Annual contract

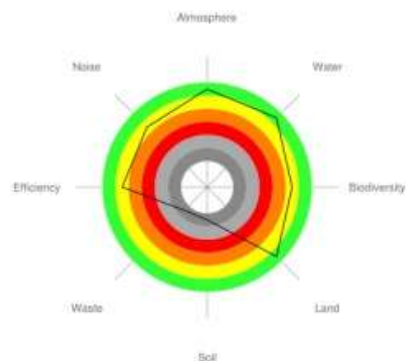
Use of electricity produced:

Internal use:	Yes	10%
Supply to the grid:	Yes	90%

Use of heat produced:

Internal use for heating (space and water):	Yes	50%
Sale for industrial (technological) purposes:	Yes	50%

	ATMOSPHERE	WATER	BIODIVERSITY	LAND COVER / LAND USE	SOIL	WASTE	ENERGY EFFICIENCY	NOISE	TOTAL
CHP	+	+	*	+		Q	*	*	*



+	Excellent	9
*	Moderate	3
-	Poor	3
Q	Not acceptable	0
Q	Data not available	2
Q	Non applicable	3
	Total	20

ASSESSMENT RESULTS

Moderate

CHP - RESULTS

PROJECT

NAME: Straw-fired CHP plant within poultry farm

PHASE: Development



DEVELOPER

ENAGRO Ltd.

01 6040 588

enagro@com.hr

SOCIAL - INITIAL QUESTIONS



The nature and level of coverage of the organisation's insurance provisions in relation to environmental and social coverage: equipment damage insurance, worker insurance, timely delivery insurance and performance

Is there an unavoidable displacement of income generating and subsistence activities, namely subsistence farming, sale of goods and services, wage employment, land lease contract? No

Does the company have management plans and resources for any of the followings and are these action plans

For Human Resources Management: Yes, €

For Health and Safety Management: Yes, €

For Procurement/Supply Chain Management: Yes, €

For Communications/stakeholder engagement: No

PROJECT

NAME: Straw-fired CHP plant within poultry farm

PHASE: Development



DEVELOPER

ENAGRO Ltd.

01 6040 588

enagro@com.hr

SOCIAL - RESULTS



SOCIAL INDICATORS		IMPACT	LABOUR	HEALTH	LAND	INFO	FEEDSTOCK	TOTAL
	PROJECT							

ASSESSMENT RESULT:

Excellent

	Excellent	24
	Moderate	10
	Poor	3
	Not acceptable	0
	Data not available	4
	Non applicable	0
Total		41



PROJECT
 NAME: Straw-fired CHP plant within poultry farm
 PHASE: Development

DEVELOPER
 ENAGRO Ltd.
 01 6040 588
 enagro@com.hr

ECONOMIC - INITIAL QUESTIONS

Description of the project - Project developer (for at least previous three years)

Net income:

Break-even point:

Net cash flow:

Project information

CAPEX: 7500000 Euro

OPEX: 1100000 Euro

IRR: 7.4

NPV:

Payback time:

Energy selling price:

Net income:

Cost of production (COGM) per unit of production (per kWh):

Break-even point:

Net cash flow:

Management

Is there a thoroughly developed business plan which risk identification and risk mitigation strategy?

Production

Please list the total production costs and costs per unit of production: null

Is there a strategy for dealing with supply shortage? E.g. are there pre-contracts with additional suppliers?

Local procurement

Where are the feedstock and materials supplied from? Are there regional suppliers represented in the project?

PROJECT
 NAME: Straw-fired CHP plant within poultry farm
 PHASE: Development

DEVELOPER
 ENAGRO Ltd.
 01 6040 588
 enagro@com.hr

ECONOMIC - RESULTS

ECONOMIC INDICATORS

	RISK MANAGEMENT	TOTAL
 PROJECT		

ASSESSMENT RESULT:

 Excellent

	Excellent	2
	Moderate	1
	Poor	0
	Not acceptable	0
	Data not available	0
	Non applicable	0
	Total	3



BEFS

Bioenergy and Food Security

Дякую за увагу!

<http://www.fao.org/energy/befs/en/>

За додатковою інформацією, звертайтеся, будь ласка за наступною e-mail адресою:

E-mail: BEFS-Project@fao.org

