Energy Supply-Chain Plan Srl

Innovative Startup at Social Vocation -- **I4.0** -- info@escp.it, www.escp.it

NUT - New URBAN TOOLS

Energy and water develop, green build to sub-urban in ***Metropolitan City*** in real asset ***Distribuited & Pervasive***

...people: eat only ???

Bio-Reactor

...who pay ???

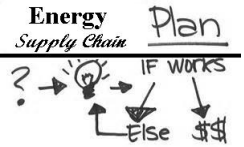
We make Earth and Health with green Job

Teams organize it:
a) Legal, contract, m&a tools
b) hr, mktg, commercial
c) IT and ITC expertise
d) Tecnics (Bio/Agro, Chem, ...)

Industrial Property and green tecnology, already PLUS in sites;

more 60 sites in Europe, ...and then to World !

IP Rights on more 20 countries (EU and others)



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Analyze problems and find RESOURCES

…Acting sensibly, are derived only by-products (not waste), raw materials for other positive processes

TM MBGC – MiniBioGasContinuous (BioGas/BioMetano)
(Biofuels from local RES, waste, wet for the city and sustainable mobility)

TM PBRC – PhotoBioReactorContinuous (AlgaeLIFE)
(Biofuels from local RES, waste, wet for the city and sustainable mobility)

TM SDGC – SolarDesalinationGeoassistedContinuous
(fresh water from brackish water, seawater, sewage or industrial processes)

TM SIDR – SYSTEM IRRIGATION, DRAINING AND HEATING
(Sustainable redevelopment, preserving energy, water and health, in favor of sports fa cilities, industrial and agro-food chains)

ESCP Srl - Innovative Startup, also already in Italy Register, I4.0

With international patents, rights on more 20 countries (EU and others)

Step 5
Edit Proposal

H2020-EIC-SMEInst-2018-2020

USER NAME
Vito Lavanga

TOPIC
EIC-SMEInst-2018-2020

TYPE OF ACTION
SME-2b

ACRONYM
NUT

FINAL ID 945702
DRAFT ID SEP-210631541

WED **09** DEADLINE (Brussels Local Time)
October 2019 17:00:00

0 Closed

Download Part B Templates

Visit our 'How to' user guide

Visit our 'H2020 Online Manual'

Edit Proposals' Forms

In this step you can edit the administrative forms and upload the proposal itself.

Administrative Forms

Edit will open the forms.

edit forms | view history | print preview

Part B and Annexes

In this section you may upload the technical annex of the proposal (in PDF format only) and any other requested attachments.

Proposal	upload	NUT_EIC_Acceler...l_template_PartB.pdf	delete	
Annexes 1-3 (Ethics and Security, CVs, Others)	upload	NUT_EIC_Acceler..._B_-_Annexes_1-3.pdf	delete	
Annex 4 - Financial and corporate information Excel file (submitted in Excel format:xls, xlsx, ods)	upload	NUT_EIC_Acceler...erator_pilot_RV.xlsx	delete	
Annex 4 - Financial and corporate information Excel file (submitted as pdf)	upload	NUT_EIC_Accelerator_pilot.pdf	delete	
Annex 5 - Pitch-Deck	upload	ESCP_NUT_EN.pdf	delete	
Optional Ethics Supporting Document(s)	upload			
Optional Other Supporting Document(s)	upload			

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E-mail: segreteria@networkaias.it - Sito: www.aias-sicurezza.it
C.F. 97014 830158

Milano, 26 settembre 2019

Oggetto: Dichiarazione di intenti progettuale nel programma Horizon 2020, SME Instrument fase 2-2018-2019.

Premessa

La presente dichiarazione di intenti progettuale segue contatti tenuti tra Energy Supply Chain Plan (ESCP), rappresentata per la presente dal Sig. Vito Lavanga in qualità di CEO e l'AIAS (Associazione professionale Italiana Ambiente e Sicurezza) con sede in via G. Fara 35 -20124 Milano, rappresentata dall'Ing. Giancarlo Bianchi, in qualità di Presidente e rappresentane legale dell'Associazione.

Energy Supply Chain Plan (ESCP) ha espresso interesse per la possibilità di ottenere supporto per sostenere la fase di presentazione della proposta progettuale, nonché per le attività di implementazione della stessa, da parte di AIAS (Associazione professionale Italiana Ambiente e Sicurezza).

La proposta sarà strutturata in due parti:

a) **Programma di riferimento**
b) **Clausole di confidenzialità**

a) Programma di riferimento

La presente proposta riguarda la preparazione di una proposta progettuale, incentrata sulla valorizzazione della partecipazione di Energy Supply Chain Plan (ESCP) nell'ambito del Programma Horizon 2020-SME Instrument Fase 2, 2018-2019. Il progetto consiste nell'implementazione di alcune tecnologie (impianti e macchine) inerenti brevetti innovativi, anche già discussi in alcune tesi presso l'ateneo UNIPV.

b) Clausole di confidenzialità

Entrambe le parti si impegnano a trattare le informazioni fornite in maniera confidenziale e a non divulgarle a terzi per ragioni che non siano strettamente connesse all'esecuzione del lavoro e ove richiesto, potrà essere firmato tra le parti un Non Disclosure Agreement.

Energy Supply Chain Plan (ESCP) si impegna ad avvalersi della collaborazione di AIAS (Associazione professionale Italiana Ambiente e Sicurezza) come sarà indicato in un accordo dettagliato steso al momento dello sviluppo del progetto per la presentazione della proposta.

Per Energy Supply Chain Plan (ESCP)

Lavanga Vito

ESCP SRL

Per AIAS
Il Presidente
Ing. Giancarlo Bianchi

aias
Associazione professionale Italiana Ambiente e Sicurezza
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Codice Fiscale 97014830158

Energy Supply Chain Plan IF Works ? else $$

Energy Supply-Chain Plan Srl

ESCP Srl - Sede Legale: Via Socrate 26 - 20128 MILANO, C.F. e P.I. 09168620962, R.E.A MI – 2073266, Cap.Soc. € 10.000,00, Pec: escp@pec.it

OGGETTO: DICHIARAZIONE DI INTENTI PROGETTUALE NEL PROGRAMMA HORIZON 2020, SME INSTRUMENT FASE 2-2018-2019.

Premessa

La presente dichiarazione di intenti progettuale segue contatti tenuti tra Energy Supply Chain Plan (ESCP), rappresentata per la presente dal Sig. Vito Lavanga in qualità di CEO e il Dipartimento di Ingegneria Civile e Architettura dell'Università degli Studi di Pavia (di seguito "Dipartimento"), rappresentato dal Prof. Alessandro Reali, in qualità di Direttore.

Energy Supply Chain Plan (ESCP) ha espresso interesse per la possibilità di ottenere supporto per sostenere la fase di presentazione della proposta progettuale, nonché per le attività di implementazione della stessa, da parte del Prof. Capodaglio (e collaboratori) del suddetto Dipartimento.

La proposta sarà strutturata in due parti:

a) **Programma di riferimento**

b) **Confidenzialità**

a) Programma di riferimento

La presente proposta riguarda la preparazione di una proposta progettuale, incentrata sulla valorizzazione della partecipazione di Energy Supply Chain Plan (ESCP)nell'ambito del Programma HORIZON 2020-SME INSTRUMENT FASE 2, 2018-2019. Il progetto consiste nell'implementazione di alcune tecnologie (impianti e macchine) inerenti brevetti innovativi, anche già discussi in alcune tesi presso l'Ateneo Pavese.

b) Confidenzialità

Entrambe le parti si impegnano a trattare le informazioni fornite in maniera confidenziale e a non divulgarle a terzi per ragioni che non siano strettamente connesse all'esecuzione del lavoro. Ove richiesto, potrà essere firmato un *Non Disclosure Agreement*.

Energy Supply Chain Plan (ESCP) si impegna ad avvalersi della collaborazione del Dipartimento come illustrato nel presente accordo per la presentazione della proposta.

Per Energy Supply Chain Plan (ESCP)

Milano, 16/9/19

ESCP SRL

Per il Dipartimento
Il Direttore (Prof. Alessandro Reali)

Pavia, 16/9/2019

Enhanced EIC Accelerator Pilot (SME Instrument Phase 2)
Proposal template

Introduction

Basic information

- **Title of proposal:** "eNergy, biogas, algae and Water for Urban and peri-urban resilience, in small buildings, companies (feed/food), agro-Technical and zoo-technical realities"
- **Acronym of proposal: NUT**
- **Details of applicant:**

Name of the entity	**ESCP Srl – Energy Supply-Chain Plan**
Country	**Italy**
Creation date (if applicable[1])	**07/27/2015**
Type of entity	**Limited Liability Company**

- **Company Description:** ESCP Srl deals with **development** and **innovation**. Its main tasks are supply of natural resources, water and energy from renewable sources and decontamination of cities and surroundings from waste due to **anthropic impact**, thus facing problems connected to demographic increase, especially for sewers, depuration, supplying. The company is recorded as "**Innovative social-oriented start-up**" in Italy. It is already concessionary for many firms and holds its on industrial patents on which bases it develops projects.

Summary

NUT aims at realizing an integrated system from patents MBGC (Biogas, to urban & periurban sites for waste & energy), PBRC (Algae, to urban & periurban sites for feed/food & biofuel), SDGC (water, to urban & periurban sites for drinking water & water reclamation), in order to treat local organic waste from human activities and produce energy, water and residuals for immediate use, thus reducing dependency from outside.
NUT is related to our mission as far as concerning **circular economy**, renewable resources and local scope - both in provision of raw materials and reduction of anthropic impact. NUT strengthen local economies considering the territory and its characteristic.

[1] *If natural person, then date of birth.*

SECTION 1 - EXCELLENCE

- **Idea and solution:**

A specific objective of the project is to make integrated systems to face anthropic impact and treat human waste from cities and surroundings - namely refluent, organic and mowing- on the same site, to produce energy and water. It relies on the following patens: MBGC for bio emission, PBRC for alga and SDGC for water treatment.
The system will be composed by two parts: a basic kit (2xMBGC, 2x10 kW; 1xPBRC, 1 t/day; 1xSDGC, 20 m2/day) of transportable modules for communities of up to 1500 people; a second kit (2xMBGC, 2x20 kW; 1xPBRC, 2 t/day; 1xSDGC, 40 m2/day) with double size and power will be made on site. The two parts will be connected and interoperational.
An agronomic estate of around 1ha close to the plant- around 1500/2000 m2- will be available to grow cultivations as gramineous or vegetables, thus combined different solutions with a focus on environment and energy sustainability and activating circular economy process.
Our solution improves water cycle, manages decontamination of organic waste from households and cities and the purification of organic waste, then inorganic waste and finally produces clean water through desalinization, ready for use.
Our project cut down **decontamination costs**, implementing new patents on local scope with high grade automation; it faces a human need, as in 2050 the 80% of human population will be living in urban areas without enlarging its settlements, due to opposition to new cement areas. Improving sewers, plants for decontamination and provisions will call for new interventions. Our proposal aims at reducing these interventions and treat waste on the same site, turning problems into resources.
We will implement our patents: MBGC turns refluent, organic and mowing into CH4, CO2, NPKx and H2O bringing down organic material and producing electric and thermic power; residuals will grow alga cultivation on site with PBRC, which will result in oleic for biofuel and green chemistry and protein for pharmaceutical and cosmetic industry- lowering inorganic waste. Finally, SDGC will erase inorganic waste producing distilled water for many purposes- agriculture, industry, hydrogen, water supply and decontamination.

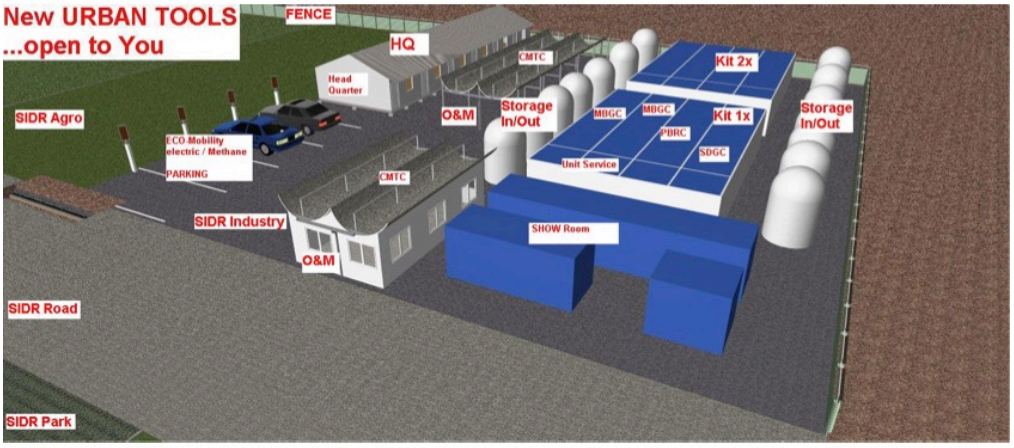
- **Innovativeness:**

Nowadays, transportation and logistics to move refluent and organic to decontamination sites are not effective; moreover, residuals are just partially decontaminated, with high **economic and environmental costs**. These problems do not currently have economic neither **widespread solutions**. Our system will convey and exploit CO2 and CH4- odorless- two causes of greenhouse effect; our project will combine a systemic approach with local plants to treat and exploit human waste, improving recycling and boosting circular economy.

We will get energy and resources for algae cultivations from refluent and organic and finally we will restore clean water to environment- as we are not using it on site- together with precipitation. Thank to our patents, our solutions will be more **cost-effective** than the current ones, far away from such range. Our system will be tested on different scopes, from few households of 10 people to communities of up to 500 people, also using specific planning instead of standard modules. Nowadays we can implement our patents' technology: market is ready. Our technology will employ workers and products locally available; it will take to

comparative research among local suppliers, thus the method itself will be repeatable everywhere, for instance it should be replicated for each communuties with more than one million inhabitants.

The key aspect of the project relies in **customized design** of mini and micro implementations (as large and small condominium, respectively), so that we can easily get to cover the diversified needs of the market. A paradigm shift to health and hygiene in common areas is expected, as wet and kitchen staff would be merged with wastewater systems. The local carbon capture action will improve the health of the air and reduce widespread contributions to the greenhouse effect; water recovery and management will reduce infrastructure dependency, as for energy supplies; **climate change** could significantly contribute to the problem with the expected extremes meteorological phenomena, which would put a strain on the resilience of current sewage networks (designed for maximum flow rates no greater than 5 times the "black" flow) and collapse the systems existing.



- **Stage of development:**

Each individual technology, enhanced by its patent, has numerous partial applications, highly supported by scientific publications and engineering- digesters, photobioreactors and desalinators. Small anaerobic digesters and in psychrophilic conditions are highly widespread; algal crops in photobioreactors exist in many configurations; desalination systems that use renewable sources are already implemented in many cultures. Technologies are already attested at TRL 6 and we forecast to reach TRL 8.

Our innovation consists in the **systemic proposal** to be implemented, which is possible thanks to the innovative patents we use. To date, many data and processes have been found in the repeated digestive processes of cattle and the linear and selective arrangement follows the usual digestive process in mammals, but never emulated as a whole in large plants. Extensive availability of algal products and derivatives, now supported by consolidated protocols, will be easily implemented in the project modules. The use of renewable resources and the efficient

management of available energy volumes, together with regular checks and feedbacks, will allow the sustaining of gradients and engines of desalination processes, coming to compete with the usual plants that use energy from fossils (distillation and osmosis).

The project bases on modules with high **customization**, in order to fit culture and productions of the territory, within the reach of common workers. Furthermore, the project foresees **customers' information** concerning both procurement of primary resources (water and energy) and reduction of anthropic impact, with the prospect of rewarding virtuous behavior instead of punishing incorrect behavior *(evolution of PPP "Polluter Pays Principles", European environment legislation).* The high popular and academic culture on the issue, the existence of specific patents and, above all, the great demand in this regard are indicators of low risk.

SECTION 2 - IMPACT

- **Market and customers:**

Our selected target is B2B (Real Estate, Agro feed/food industry, hydraulic and electrical systems), well solicited by final consumers for usability and expected ease, economy, logistic and environmental benefits. Essentially, we think of the supply chains involved in the redevelopment of previous real estate assets. To date, the market does not offer systemic answers to this question, nor with equal efficiency, economy and pervasiveness. We will implement a **widespread and close distribution** to this latent demand, thanks to the high capacity for customization and the use of local products and workers.

Due to the startup stage of the company / project and the peculiarity of the offer, the clientele is new, already pre-targeted by the partnerships that have expressed interest in relevant industrial developments. The target, as, for example, construction contractors, thermo-hydraulic and electrical installation companies, automation, services and logistic businesses, has been extensively probed with positive results, with expressions of interest and expectation of the first series to be used (objective to which the present project is about).

The target is very motivated by the respective clientele: residential, micro agro-animal husbandry, micro-manufacturing food / feed as well as service industry. The market is constituted by the demand (not satisfied by the current industrial offer) of anaerobic micro-digestion (MBGC), aimed at **recycle organic waste of everyday life**: wastewater, wet and mowing from residential, agro-food manufacturing, large-scale retail trade, HoRe.Ca. and receptivity.

Our objective is to reach 20% of demand for thermal and electrical energy in the residential area in 10 years starting from 1%, with a 15% annual trend. The related by-products are used in the production on site of primary resources (oil and protein, thanks to PBRC): km0 interventions, to meet food needs (feed / food) and energy (biofuels), through direct transformations on site or using consortium structures.

- **Commercialisation strategy:**

The offer intends to achieve critical masses and significant economies in **small settlements** not yet approached by the big active players, due to their verticalization and greater problems in recognizing adequate critical masses. Major barriers are the lack of proven prototypal series (the only persuasive element for end users) and lack of confidence of technologists in being supported by their respective entrepreneurs, who are not keen on innovation of virtuous processes, in spite of the need for interventions in favor of climate and environment.

This project aims to open up new horizons for the entire community. We believe that, by activating virtuous productions, we will break through and, thanks to a vast commercial and communication plan, we will **overcome the lack of trust** and therefore create synergies to satisfy, collectively, the widespread latent demand. Important tools and distance learning plans are contemplated to establish trust during the project and in the future.

- **External Strategic Partners:**

ESCP (Energy Supply Chain Plan) has in its mission the development of solutions and supply chains adequate to human needs in environmental energy fields and circular economy in general. The development of very dedicated design and customization models is the strategy we want to implement and promote in each specific territory, making extensive use of local resources (human and material resources).

Particular attention will be paid to creation of virtuous commercial and technological operating networks with local companies. The ESCP value chain is strongly based on coordination and **empowerment of industrial partners** on the field, with which it establishes commercial agreements and management of pre-emption on significant developments. ESCP reserves the **technical and strategic direction**, strengthened by its organizational and technological skills, also capitalizing the results achieved so far on the technical-scientific level.

The industrial relations in progress are in an advanced state of definition, pending only the economic/financial activation conditions. Our business model preserves a strong organizational component within the company and strategic research & development, delegating tactical and operational activities outside. The volume of revenues derives from customary industrial markup of the sector (20% -30%), as well as royalties and commercial results. Know-how and technologies will be shared through targeted commercial agreements with players of every economic context in Europe and beyond, under protection of national intellectual property right (UIBM / Rome) and international (WIPO / Geneve).

Please find attached the letter of intent with AIAS (Italian professional association Environment and safety) and with the Engineering department of the University of Pavia that will be strategic allies for the research issues.

- **Intellectual property:**

  ESCP has extensive industrial and **specific patents**, as MBGC, PBRC, SDGC, fulcrum of the project, ITEG, SIDR and other auxiliaries. The definition of rights and pre-emption on the agreed territories ensures a wide faculty to carry out the planned strategies. ESCP executives and managers are directly in possession of the know-how underlying the industrial property in the portfolio (some also own the property as authors) and are able to supervise their development and implementation. The innate propensity to research and development of ESCP means that appropriate **protocols of confidentiality** are established with company's or external collaborators. Associates from patent-attorney sector will be constantly in force to protect achieved results.

  High IT / ICT tools for local and remote control will be put in place also for micro activities to collect significant data, in full compliance with corporate and privacy policies- GDPR. Many of the results achieved to date are directly supervised (WIPO / Geneve, EPO / Munich, UIBM / Rome, EAPO / Moscow,). Relevant information will be appropriately protected, implemented and distributed to the market.

- **Scale up potential:**

  The major capital of ESCP is represented by **industrial property** rights, organizational skills, research and development capabilities, both technological and commercial, thanks to IT / ICT know-how. The commercial role of **concessionaire** for a vast set of intellectual property (national and international) is also important. Given the condition of ESCP, the impact will be considerable in every financial and organizational profile.

  Production and **revenues** are expected to exceed 10 million per year, with production levels of around 60/80 modules per year, employing over 100 human resources and with a growth trend of 15% per year at least for a first ten-year cycle. The estimated budget for the start-up of the project is around € 4 million, with start-up and arrival times of around 18 months. Organization, commercial communication and dissemination will be strongly supported from the first moments.

  Partnerships, through agreements and expressions of interest, will be abruptly activated. Co-financing is supported by its own human resources, intellectual property already in the portfolio and commercial agreements. ESCP, during the start-up phase, will maintain high attention to the development of the first series with their relative development and testing, functional to their future sale. Testing and development processes in the start-up site and scheduled certifications will be supported by access to funds in an early stage, then by the usual commercial credit. A regime of full **self-sufficiency** is expected after about 3 years.

- **Key Performance Indicators:**

The project aims at bringing the technologies related to patents to a level offering to the market both **finished products**, including the first prototype series, and **implementation models** to be re-proposed on other similar sites, in order to activate synergies with local realities, replicate the interventions implemented in the basic project and make them effective in widespread real estate (residential, tertiary and industrial).

Main market indicators will be the booking levels in the various commercial segments, residential, accommodation, agro-livestock, GDO / HORECA, manufacturing industry. Market acquisitions are envisaged for a value of around **20% in 10 years**, starting with **about 1% and a trend of 15% per year.**

Breakeven point is expected in the first two/three years, as the offer is completely new and expected by the market, due to the benefits it produces.

- **Broader impact:**

Outcomes of the project will be: **contrasting the greenhouse effect** (capturing on-site climate-altering gases, CO2 and CH4) **cutting** the energy and economic **costs** of **waste treatment** (20% less energy from the outside) and zeroing out the clean-up charges on **improvement of the water cycle**.

The project will provide an extensive data collection both at the development site and in the final customer locations, which is a significant support for improving timely and customized design.

There will be commercial and social implications, due to the expected benefits for environment and primary resources, that will take to high levels of communication and penetration in daily life. Where the data does not affect privacy or profitability, they will be available with high transparency both to public bodies, as Health Services, Fire Department, Civil Protection, and for general public in a broad sense.

SECTION 3 - IMPLEMENTATION

- **Team and capabilities:**

The team is articulated in different experiences and specializations: it includes managerial and commercial profiles, with propensity to report on existing demand in the territory. There are strong scientific and technical components, linked to universities and institutions. Construction and logistics professionals will set up the site with flexible and customizable models. Local and remote management for security and safety will be strategically present from the beginning.

ESCP, with its own managers and proprietary resources, provides the complementary means, supports the strategic vision towards the production regimes of the site and provides strong portfolio relations with the industrial and academic fabric, as well as strategies developed in relations with CONFAF / WAA (already in the context of Expo 2015, at the 6th World Congress of Agronomists).

The strength of the team lies in the versatility of experiences and skills put into play: the possible synergies are relevant and to be enhanced from the first moments, both in the early stages of planning and implementation. The intermediate testing and milestones programmes have a regular progress monitoring plan, which will be strategic to overcome weaknesses resulting from differences and modest initial mutual knowledge in the team.

The project is implemented with direct human resources, both employees and consultants. The significant and targeted use of external supplies results in using local workers and products, strongly linked to the territory.

Team Member (Name and Surname)	**Position**	**Department**	**Function/ key competences**	**Commitment (from 1-100 % where 100 % is full time, i.e. no other commitments/roles/responsibilities outside of the company).**
Vito Lavanga	CEO	Management	Project manager	100%
Antonio Tomasone	Associate	Management	Marketing manager	100%
Stefano Battezzati	Associate	Management	Accountant	100%
Simona Ramponi	Employee	R&D	Researcher	100%
Rita Ferro	Employee	R&D	Researcher	100%
Trinca Alessandra	Employee	R&D	Researcher	100%
Farnè Stefano	Consultant	R&D	Researcher	50%

Capodaglio Andrea	Consultant	R&D	Researcher	50%
Prati Maurizio	Employee	Communication	Dissemination advisor	100%
Dichiera Paolo	Employee	Production	Skilled worker	50%
Corina Marco	Consultant	R&D	Energy expert	70%
Cricelli Vincenzo	Employee	Production	Skilled worker	100%
Frigerio Giorgio	Employee	ICT	ICT consultant	100%
Jandolo Sergio	Employee	Administration	Accountant	100%
Broglio Paolo	Employee	R&D	Researcher	100%
Carone Giacomo	Employee	ICT	ICT consultant	100%
Fusoni Massimo	Employee	Marketing	Marketing consultant	100%
Rosa Costantino	Consultant	Administration	Accountant	100%
Grimaldi Stefano	Consultant	R&D	Researcher	50%
Cavagna Mauro	Employee	R&D	Researcher	100%
Tocci roberto	Employee	R&D	Energy expert	100%

- **Financing needs:**

Main expenses consist of:

- Human Resources;
- Mechanical, ICT, Electrical supply;
- Carpentry;
- Dissemination and marketing;
- Financial management of the activity up to break-even point.

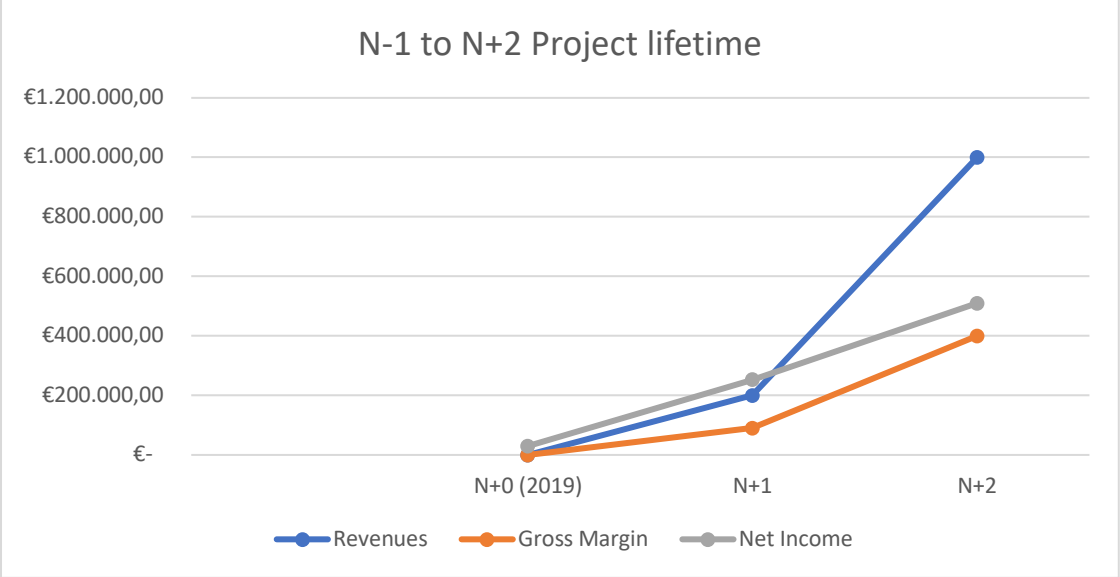
For a total amount of 2,492,000 million euros.

The resources should be divided as follows:

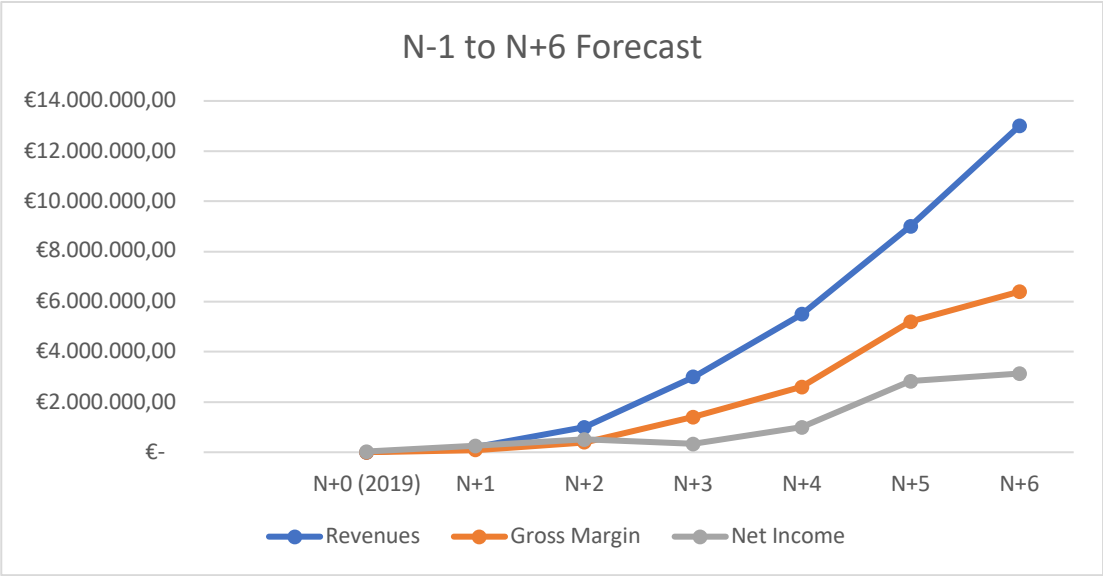
- 40% to start
- 60% for the progress of the project.
- 70% grant requested
- 30% internal financing

	Year 1		Year 2		TOTAL (Y1+Y2)
Grant	**1.744.400,00 €**				70%
	40%	697.760,00 €	60%	1.046.640,00 €	
Cash flow	**747.600,00 €**				30%
	40%	299.040,00 €	60%	448.560,00 €	
TOTAL	**40%**	**996.800,00 €**	**60%**	**1.495.200,00 €**	**2.492.000,00 €**

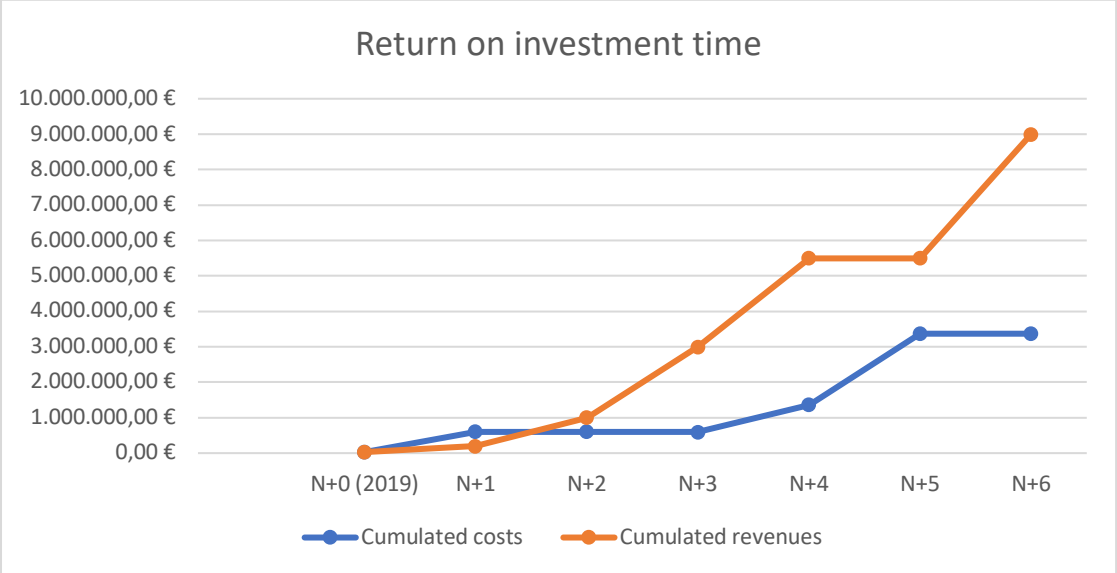
Revenues, Gross Margin and Net Income forecast during the project lifetime:



Revenues, Gross Margin and Net Income forecast with Grant intervention:



Return time on investment in case of grant and project activities implementation in between year N+4 and N+5.



- **Need for EIC support:**

  The project is very ambitious, provides for high replicability and expansion with other operators, both domestically and internationally. The need for funds is not in the usual availability of operators intercepted until now, poorly structured and not inclined to undertake virtuous and widely significant processes. We believe that EIC, on the other hand, could trigger such processes, which would otherwise remain latent, while the need to counteract the effects of climate change is becoming increasingly urgent.

- **Risks:**

SWOT Analysis:

STRENGTHS	WEAKNESSES
1. Introduction of new integrated system 2. Reducing the anthropic impact 3. Reduced product costs for buyers 4. Pre-trade agreements with buyers 5. Agreement with the University of Pavia 6. Patents already registered 7. A part of the technology has been already implemented	1. Early adoption trustability 2. Loss of pre-trade agreements in the event of production delays
OPPORTUNITIES	**THREATS**
1. Growth of sensitivity and ecological culture 2. Growth in the market demand	1. Unforeseen legislative and regulatory changes 2. Unfair competition from foreign importers

.

- **Approach:**

  Thanks to NUT we plan a rapid production of initial results, including timely actions to communicate and share the results pursued. The expected results in the first six months will be readily disseminated and offered to the market, improving project's penetration and

effectiveness. After the beginning, each area will prepare its own vertical plan, while frequent meetings will keep strategic synchronization.

The macro roadmap includes:

- preparation of contractual and infrastructure relations (opening site and safety);
- activation of the general plate, the specific process areas and those subservient to the power supply;
- Kit1 settlement with allocation modules and basic services;
- start-up design and on-site implementation of Kit2;
- implementation of the plans, with the start of production processes, first tests and minor models;
- data collection, internal and external verification and measurement reports;
- process remodulation and development on the first trials;
- extensive test plan for biogas, algae and final water treatment;
- preparation of studies and publications;
- dissemination and reports.

The 5 detail plans are activated at the same time and of equal duration, then they will continue at full capacity. The plan consists in the systematic repetition of the basic model: after the first testing on site, it will have to follow a reiteration at similar sites in the territory of relevance.

WP NUMBER	WP TITLE	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
1	**Project management & ICT**																		
1.1	Administration						D1.1												
1.2	Financial reporting																		
1.3	Communication and marketing												D1.2						
1.4	ICT management																		
2	**BIO analysis planning**																		
2.1	Anaerobic digestion plans																		
2.2	Processing and simulations																		
2.3	Internal and external plans																		D2
3	**Agro system realizatiion**																		
3.1	Basic process																		

3.2	Site preparation																		
3.3	Approach to market																		D3
4	**Kit implementation**																		
4.1	Plan acquisition																		
4.2	general planning																		
4.3	Security and safety																		
4.4	Kit 1																		
4.5	Kit 2									D4.1									
4.6	Supervision												D4.2						
4.7	Plants management																		D4.3
5	Research output dissemination																		
5.1	Academic research																		
5.2	IP issue															D5.1			
5.3	Dissemination																		D5.2

- Summary table of the project 5 Work Packages and only essential deliverables (ideally one deliverable per Work Package).[2]

Work Package (number and title)	Start month	End month	Deliverable (number and title)	Milestone (description and date) – if applicable	Person months	Indicative budget	Indicate if requesting financing by grant or equity investment
1 Project management & ICT	1	18	R	Master Plan, M6	90	720.000	70% Grant 30% Co-financing

[2] *Deliverables are outputs (e.g. information, special report, a technical diagram brochure, list, a software milestone or other building block of the project) that must be produced at a given moment during the action.*

Milestones are control points to help chart your progress. Milestones may correspond to the completion of a key deliverable. They may also correspond to other inputs, allowing the next phase to begin, to decide on further steps or to take corrective measures.

2 Bio analysis planning	1	18	DEM	BIO program, M18	42	336.000	70% Grant 30% Co-financing
3 Agro system realizatio n	1	18	DEM	Agro program to the market, M18	54	432.000	70% Grant 30% Co-financing
4 Kit implemen tation	1	18	DEC	Monitorin g system implement ation, M18	108	864.000	70% Grant 30% Co-financing
5 Research and dissemina tion	1	18	R	Publicatio ns of the research output, M18	36	140.000	70% Grant 30% Co-financing

Work package number	1		
Work package title	Project management & ICT		
Start month	1	**End month**	18
Person months	90		
Budget	720.000		
Indicate if requesting financing by grant or equity investment	Grant & co-financing		
WP description General planning both for short and the long term. Administration, human resources and their allocation, coworking. IT/ICT infrastructures, with local and remote process balancing (IoT, IIoT, Hub, Cloud). Business relationships and financial instruments.			
Description of tasks: Task 1.1. Administration, reporting, human resource allocation and internal training, security. Task 1.2. Financial reporting, industrial plans and expansion programs. Task 1.3 Communication plans, acquisition of orders and placement of achieved results or near release; Task 1.4 IT/ICT infrastructures, back-up and safety setups, training and communication tools (FADs).			

List of deliverables[3] (only the ones presented in the summary table above)				
Number	**Deliverable name**	**Type**	**Dissemination level**	**Delivery date (in months from the project start)**
1.1	Master Plan & General Management	OTHER	CO	M6
1.2	Plan and strategy, policy	OTHER	CO	M12

Work package number	2		
Work package title	BIO analysis planning		
Start month	1	**End month**	18
Person months	42		
Budget	336.000		
Indicate if requesting financing by grant or equity investment	Grant & co-financing		

WP description

Kit1 and Kit2 release. Predictive and corrective monitoring. Anaerobic digestion simulation. Evaluation of growth of various algal species, with preparation of their cultivation. Project's ecological sustainability plans and analysis plans (emissions/entry law, with appropriate support plans).

Description of tasks:

Task 2.1 anaerobic digestion plans, comparative studies with congruent competitors, starting algal productions.

Task 2.2 processing and simulations, predictive and corrective interventions, biogas, algae and water in order to combat organic and inorganic load.

Task 2.3 internal and external plans and procedures; procurement plans and simulations for optimization; external laboratories (CRPA, TecnoLab).

List of deliverables[4] (only the ones presented in the summary table above)				
Number	**Deliverable name**	**Type**	**Dissemination level**	**Delivery date (in months from the project start)**
2.1	Bio Program & Management	DEM	CO	M18

[3] *If your action is taking part in the Pilot on Open Research Data, you must include in one of your work packages a data management plan as a distinct deliverable within the first 6 months of the project. This deliverable will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the H2020 Guidance on the Funding & Tenders Portal.*

[4] *If your action is taking part in the Pilot on Open Research Data, you must include in one of your work packages a data management plan as a distinct deliverable within the first 6 months of the project. This deliverable will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the H2020 Guidance on the Funding & Tenders Portal.*

Work package number	**3**		
Work package title	Agro system realization		
Start month	1	**End month**	18
Person months		54	
Budget		432.000	
Indicate if requesting financing by grant or equity investment		**Grant**	

WP description

Control, with peaks in the Kit1 and Kit2 release phases. Predictive and corrective monitoring, with slow-paced production rhythms.

Description of tasks:

Task 3.1 - integrate basic processes (biogas, algae, water); comparative studies and crop selection; aim for high-quality productions, oil and protein targets (nutraceutical, feed/food);
Task 3.2 – Site preparation for selected crops, pretreatment with biogas, irrigation systems, steam voltage and sub breathing, innovative micro-greenhouses (CMTC, SDNA) with performance measures;
Task 3.3 – approach to markets, pre-testing high-quality productions, models of micro vertical-farm and comparison with products on the market, insertion of tools in the city (terraces, cellars).

List of deliverables[5] (only the ones presented in the summary table above)

Number	**Deliverable name**	**Type**	**Dissemination level**	**Delivery date (in months from the project start)**
3.1	Agro Program & Management	DEM	CO	M18

Work package number	**4**		
Work package title	**KIT IMPLEMENTATION**		
Start month	1	**End month**	18
Person months		108	
Budget		864.000	
Indicate if requesting financing by grant or equity investment		Grant & co-financing	

WP description:

Plan and implement logistics. Kit1 design and implementation. Kit2 design and implementation. Implement the expected settlements. Management and monitoring (local and remote).

Description of tasks:

[5] *If your action is taking part in the Pilot on Open Research Data, you must include in one of your work packages a data management plan as a distinct deliverable within the first 6 months of the project. This deliverable will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the H2020 Guidance on the Funding & Tenders Portal.*

Task 4.1 Plan acquisitions (K1) and realization (K2). Installation fittings (electric, plumbing, mechanical); Task 4.2 General planning (LEED). Management and supervision with REM. Simulations and renderings.
Task 4.3 Security and safety. Communication on construction sites. Training.
Task 4.4 Kit1 Preparation and site control. Complete and optimize plates for the two settlements. Connect systems (electrical and mechanical) between the various components of Kit1.
Task 4.5 Trim support plate for the Kit2 with relative predisposition for safety. Kit1/Kit2 releases and tests. Project models for urban planning and periurban areas.
Task 4.6 Supervision of processes.
Task 4.7 Technical and organizational management of the plants.

List of deliverables[6] (only the ones presented in the summary table above)

Number	**Deliverable name**	**Type**	**Dissemination level**	**Delivery date (in months from the project start)**
4.1	Kit 1&2, Layout Process	DEM	CO	M9
4.2	Biogas-Algae-Water systems	DEM	CO	M12
4.3	Monitoring systems (Local/Remote)	DEM	CO	M18

Work package number	**5**		
Work package title	Research & dissemination		
Start month	1	**End month**	18
Person months	36		
Budget	140000		
Indicate if requesting financing by grant or equity investment	Grant & co-financing		

WP description

Observation, data collection and evaluations, with multiple peaks in the central part of the entire plane; development monitoring and frequent comparison with relevant technology sectors.

Description of tasks:
Task 5.1 – Academic relations and research. Preparation for proper certifications to be pursued. Supervision of communications and scientific publications.
Task 5.2– Intellectual property developments.
Task 5.3 – Scientific and dissemination publications, with institutions, associations and universities.

List of deliverables[7] (only the ones presented in the summary table above)

[6] *If your action is taking part in the Pilot on Open Research Data, you must include in one of your work packages a data management plan as a distinct deliverable within the first 6 months of the project. This deliverable will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the H2020 Guidance on the Funding & Tenders Portal.*

[7] *If your action is taking part in the Pilot on Open Research Data, you must include in one of your work packages a data management plan as a distinct deliverable within the first 6 months of the project. This deliverable will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the H2020 Guidance on the Funding & Tenders Portal.*

Number	Deliverable name	Type	Dissemination level	Delivery date (in months from the project start)
5.1	Studies & Publications	R	PU	M36
5.2	Certifications	R	PU	M36

- **Resources**

  Please complete the table below only if the sum of the costs for' travel', 'equipment' and 'goods and services' exceeds 15% of the personnel costs (according to the budget table in section 3 of the proposal administrative forms).

	Cost (€)	Justification
Travel	10,000	Plane tickets; Hotel and restaurants.
Equipment	950,000	Logistics and Location Supply; Supply of prefabricated cLS armed on design and proprietary molds; Supply of reinforced concrete structures on a proprietary project; Supply of electrical panels, electrical systems, automation; Mechanical and thermoelectric power supply; Supply of carpentry.
Other goods and services	650,000	IT/ICT, Hw/Sw, modelling, rendering; Providing culture and green works; Providing publicity, marketing, media, fairs; Industrial privatives (startup and first exercise).
Total	1,610,000	

- Please complete the following table (or simply state "No third parties involved", if applicable)[8]:

[8] *Subcontracts (Article 13 of the Grant Agreement) concern the implementation of action tasks; they imply the implementation of specific tasks which are part of the action and are described in Annex 1 to the Grant Agreement,*

Linked third party (Article 14 of the Grant Agreement) is an affiliated entity or has a legal link to a participant implying a collaboration not limited to the action.

Contributions in kind provided by third parties (Article 11 and 12 of the Grant Agreement): Third parties contributing in kind make available some of their resources to a beneficiary without this being their economic activity (i.e. seconding personnel, contributing equipment, infrastructure or other assets, or other goods and services).

Do you plan to subcontract any tasks? *If yes, describe and justify the tasks to be subcontracted and the amount. Explain the measures to comply with the best value for money principle. Please be aware of the page limitation – if needed, add more details in Annex 3.*	◯ **Yes**

Task(s)	**Estimated amount**	**Measures to comply with best value for money (eg. criteria used for the selection of the subcontractors)**
Logistics and Location Supply.	100.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
IT/ICT, Hw/Sw, modelling, rendering.	150.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Supply of prefabricated cLS armed on design and proprietary molds.	100.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Supply of reinforced concrete structures on a proprietary project.	200.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Supply of electrical panels, electrical systems, automation.	150.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Mechanical and thermoelectric power supply.	200.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Supply of carpentry and structures (pvc and metal).	200.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Providing culture and green works.	100.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Providing publicity, marketing, media, fairs.	100.000	Local tenders for workers and products, as emerged from executive plans and metric computations.

For more information on the classification of Information, please refer to the Horizon 2020 guidance: https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/secur/h2020-hi-guide-classif_en.pdf

Industrial privatives (startup and first exercise).	300.000	Local tenders for workers and products, as emerged from executive plans and metric computations.
Will any of your linked third parties work in the action tasks?		No
Will you use contributions in kind provided by third parties?		No

Energy Supply-Chain Plan Srl

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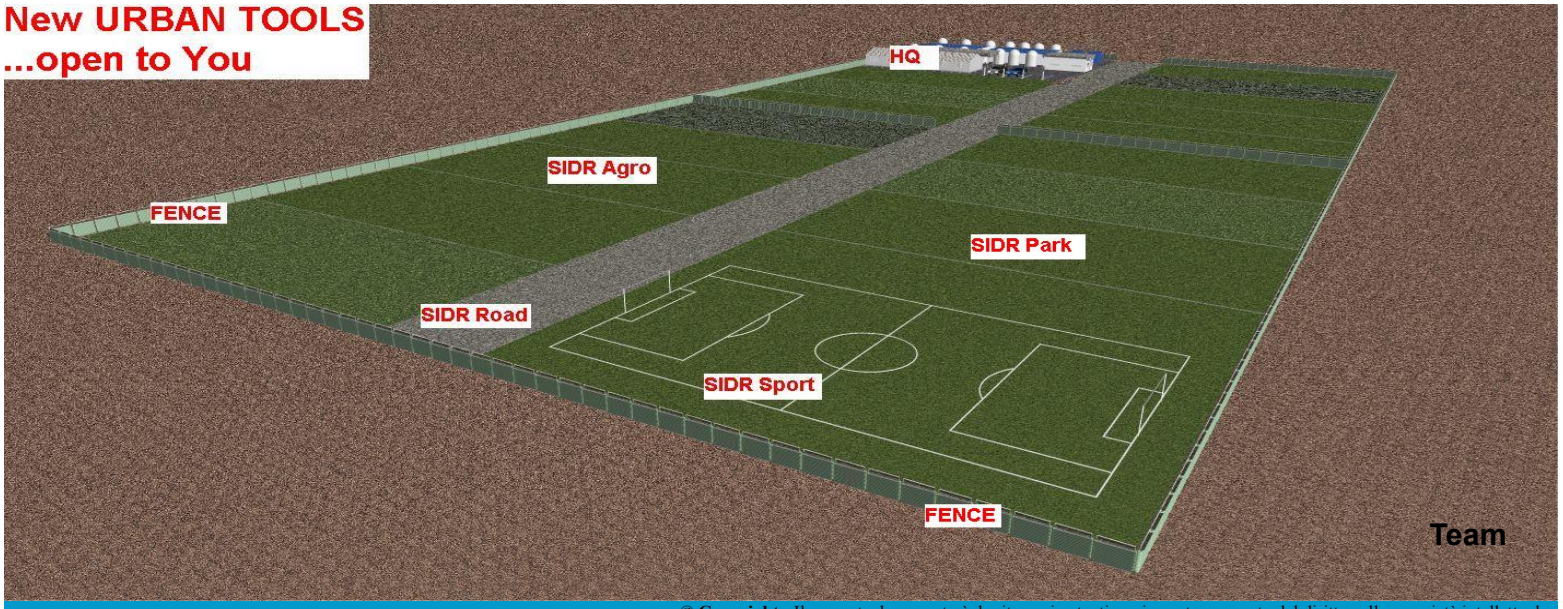
Team (30 HR, also young jobers), owners and authors of Patents/Know-How; set of experts who have been sharing innovative ideas and solutions from years,

...with team goals !!!

The team contains many skills aimed at communication (technical and commercial) and

above all towards continuous innovation



Energy Supply-Chain Plan Srl

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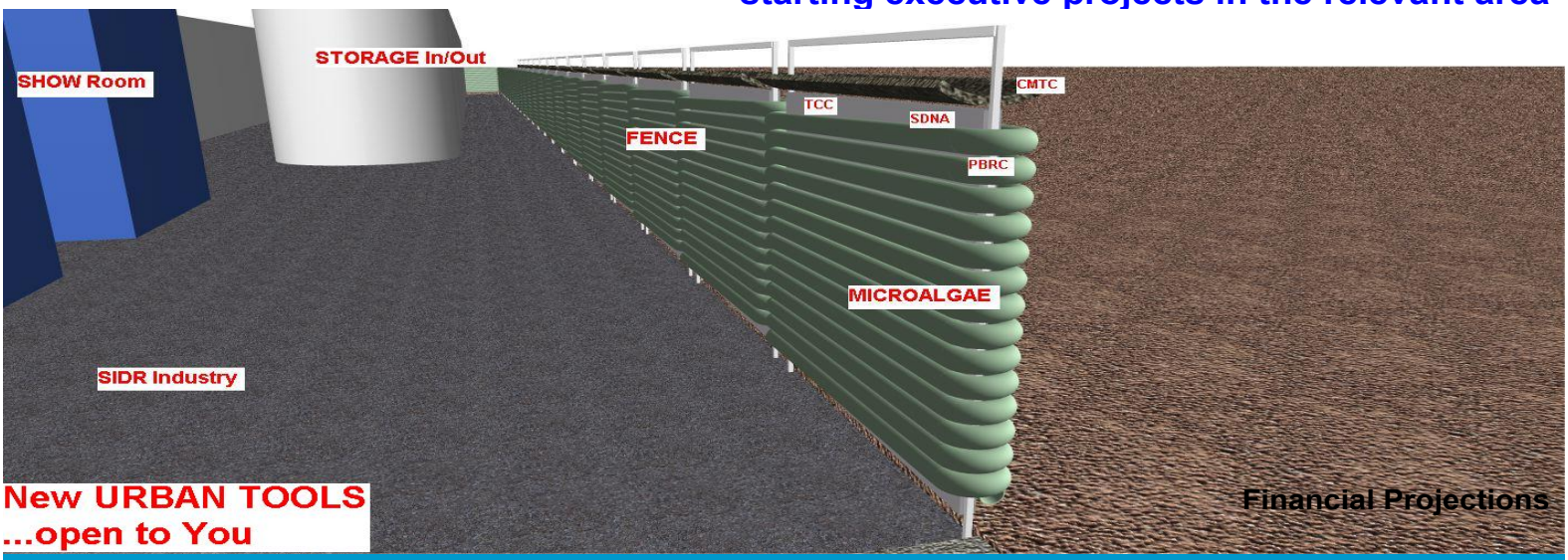
Produce prototypes to sale soon, products and know-how (with local bodies and firms, universities and entities) ...to turnover over 8 M€/y

(4y break-even)

From the third quarter, customized design models will be ready, offered to customers and

starting executive projects in the relevant area



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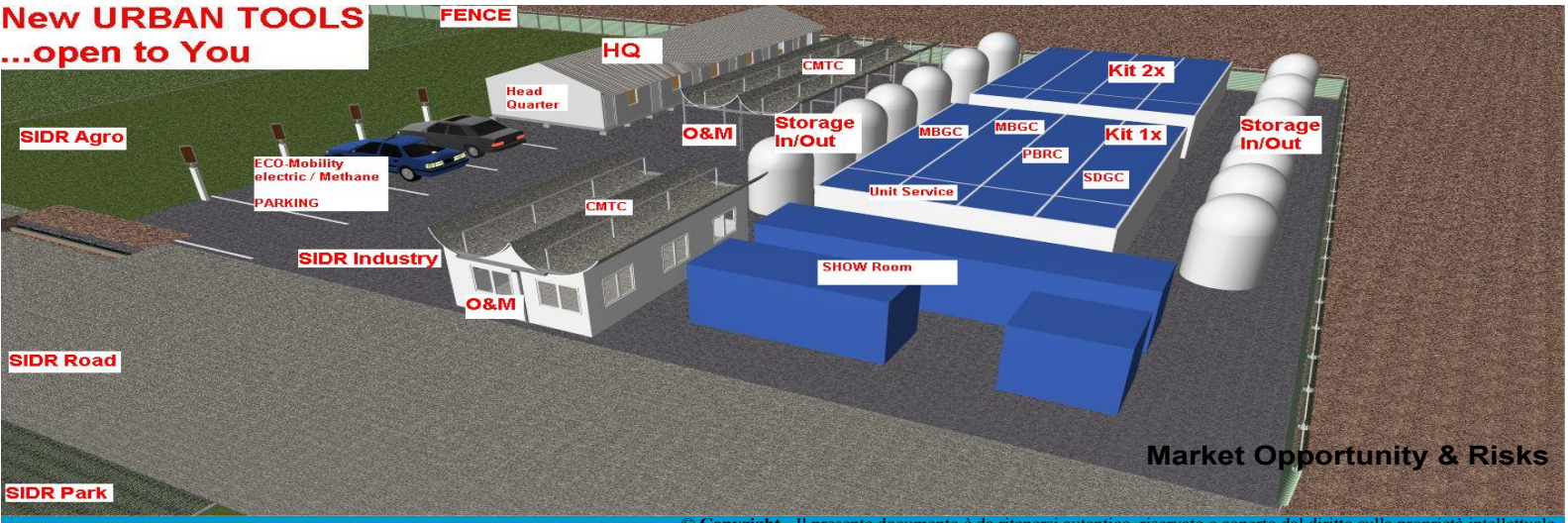
Do critical mass with wastewater, wet, mowings; virtuous cycle on water, wealth is obtained and less load on purifiers, sewers, ...from one's own DOMAIN

The jurisprudence on emissions / immissions imposes and allows great possibilities of action with high efficacy, in a distributed & pervasive way

urges self-awareness and virtuous behavior



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Mature products that the market expects, the result of operational research and feasibility with local resources of the territory, ... with clients already awaiting the product

Already spent many funds to capitalize on Industrial Property, the next uses are dedicated to

full productivity, technological and commercial

Thanks for your attention

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