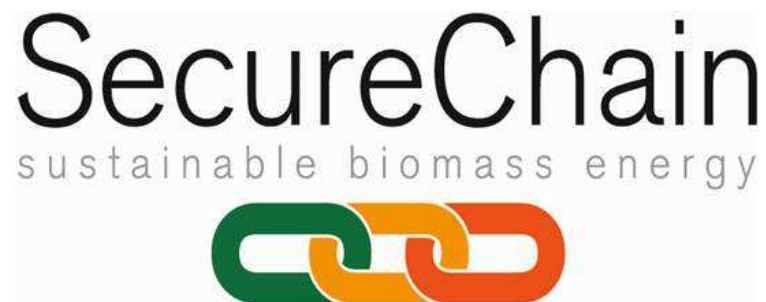


Financing Market Uptake in Bioenergy: Risk assessment



Final Conference
Brussels, 7 June 2018



**UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH**

Campus d'Excel·lència Internacional



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UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

Campus d'Excel·lència Internacional

Universitat Politècnica de Catalunya - BarcelonaTech

Public higher education and research institution

Specialized in the fields of architecture, science and engineering.

- 
1. Barcelona
 2. Castelldefels
 3. Igualada
 4. Manresa
 5. Mataró
 6. Sant Cugat del Vallès
 7. Terrassa
 8. Vilanova i la Geltrú

21 schools in 10 campuses
42 departments
6 research institutes

**30,860 undergraduate and
postgraduate students**

**Bachelor's, master's and doctoral
degree courses**



65 bachelor's degrees, 73 master's degrees, 49 PhD programmes
87 international double-degree agreements with 51 universities
5 UNESCO chairs
2,390 articles published (journals) + 68 patents
2,190 collaborator companies + 8 start ups (Innova programme)

Hub of talent, innovation, technology transfer and regional development:

- **2009: Barcelona Knowledge Campus (BKC)**, a project carried out with the University of Barcelona
- **2011: Campus of Excellence with the UPC Energy Campus project**
- **2012: Partner of the KIC Innoenergy project**, Leader of the Iberia CC
- **€58,800,000 turnover for R&D projects (2017)**



205 research groups recognised
by the Catalan government

3,066 teaching and research staff members
(60% PhD holders)

1,480 administrative and service staff
members

19 research
centres belonging
to the TECNIO
network

- Research and innovation projects
- Technology-based companies
- Spin-offs and start-ups

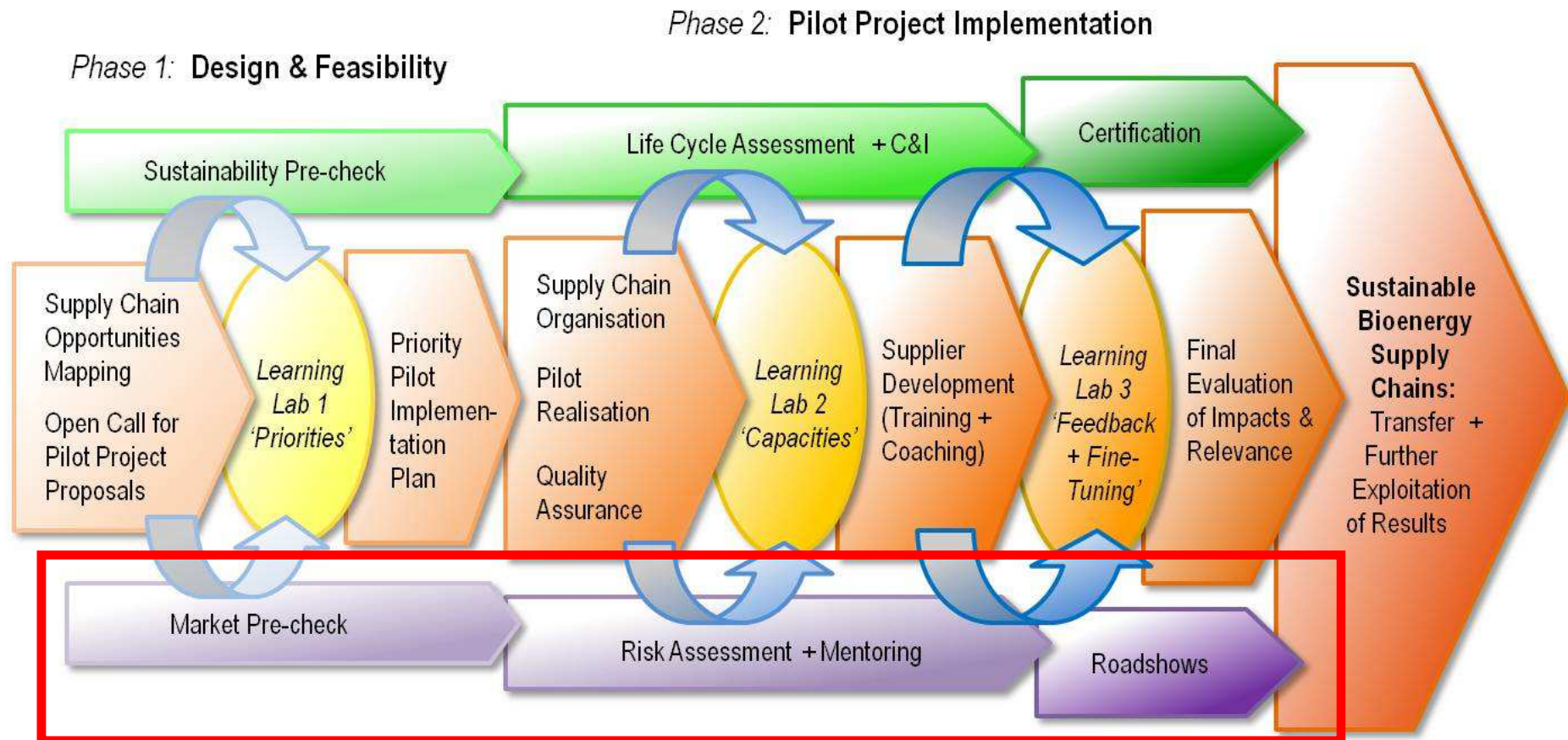




1. Snapshot of WP5 Financing
2. Risk Assessment Guidelines:
 - Methodology
 - Risks inventory and mitigation strategies
 - SME perspective
 - Investor perspective
3. Takeaways from the Roadshows & Finance session yesterday

SecureChain WP5 Financing

Objectives: Secure the **financial viability** of SME bioenergy pilots and **guide** new investments. **Prepare and apply a risk assessment tool**, and mentor the pilots development. Facilitate **roadshows** to broaden visibility of SME projects and mobilise investments from regional and international financiers





Risk Assessment Guidelines

A Risk Assessment Guideline for Bioenergy Project Finance

Practical guidance to SME managers,
entrepreneurs and financiers for the
assessment of bioenergy projects

Small and medium enterprises are the core of the solid biomass to energy sector. What are the business opportunities in bioenergy and how can investments in sustainable supply chains be facilitated?



Methodology

SME pilot projects mentoring cycle – appraisal, nurturing, leveraging funds

1. Learning Labs
2. Interviews, Case study Analyses
3. Roadshows



Secure Demand

"The key factor for reaching financial close was securing a long term off-take contract with a dairy company that acquires our biofuels"

Pyrolysis Plant CEO



Fuel Supply

"Smaller Scale Projects with simple feedstock supply chains are easier to sell or finance"

A Bioenergy Project Development Consultant




Favourable Regulatory Framework

"Having a feed in tariff set at 0.18EUR kWh encouraged us to invest in a back up 180 kW CHP plant that operates in summer instead of the 2MW boiler".

A 2MW District Heating Network Manager from Austria

Grup Renerbio is a family owned and managed business with more than 20 years experience in energy generation and forestry management. The group consists of three business units: Pellet Manufacturing, Energy Service Company (ESCO) and Electricity Generator.



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FACILITIES

- Fuel Combined Heat and Power (CHP) Plant with 18,8 MW electricity and 14,5 MW heat capacities.
- Gas Combined Heat and Power (CHP) Plant with 6MW electricity generation capacity and 5,4 MW heat capacity.
- Pellet Manufacturing Plant with production capacity up to 64.000 tn/year.


BRANDS & COMERCIAL ACHIEVEMENTS



Rofeica Energia
Organización de energía

Energy Generation and OMIE Wholesale Electric Market Commercialization.


Ranked on the TOP 50 Spanish CHP Energy Generators.



vatnova
Comercialización de energía

Commercialization of electric power targeting Small Medium Enterprises.

Ranked among the TOP 50 electric distributors in Spain.



NOVALIA Sinergie

Pellet manufacturer certified as Enplus A1 Premium and Dinplus.

Ranked on the TOP 3 Spanish Pellet Producers.

TEAM

Gemma Romani
President

Joan Romani
Chief Executive Officer



Graziella Garibaldi
Chief Financial Officer

Xavier Alòs
Chief of Sales and Marketing




FINANCIALS

	2015	2016	2017
Number of Employees	23	23	25
Electricity Generation (MW/year)	144.000	120.000	160.000
Heat Generation (MW/year)	116.000	100.000	137.000
CO2 Emissions (Tn/year)	90.000	86.000	111.000
CO2 per kWh Electricity (MW/Tn)	0,6	0,7	0,7
EBITDA	€2.837.574	€1.789.151	€3.112.403
EBITDA on Assets	16%	10%	13%

Risk inventory and mitigation strategies

Risk Category	Risk Type	Mitigation Strategy
Fuel Supply 	Biomass availability/ contract	Set out mid-term contract agreement with reliable suppliers, establishing quantities to deliver and pre-arranged prices.
	Biomass price	Assess and validate feedstock supply chain.
	Logistics implementation	Identify sources of biomass and delivery routes to plants.
Capital Expenditures 	Technology choice and plant design	Incorporate Engineering, Procurement and Construction (EPC) partners.
	Project design & management	Adopt the Front-End Engineering Design (FEED) approach.
		Build an outstanding team and establish a governance model among participants.
	Land acquisition or usage	Be clear about ownership or terms of rent formalization.
	Construction	Ensure that the necessary permits and authorizations are in place.
	Grid connection	Obtain approval from national energy authorities.

Risk inventory and mitigation strategies

Risk Category	Risk Type	Mitigation Strategy
Price of Electricity or substitute fuels 	Baseline Price of energy (opp. cost)	Minimize costs of self-produced heat and/or electricity.
		Negotiate electricity with utilities based on time-of-use tariffs, focusing self-consumption strategy on peak tariff periods.
Finance 	Public-private arrangement	Negotiate long term Purchase Agreements (PA), such as Feed in Tariffs or ESCO services.
	Cost of capital	Conduct financial analysis to estimate returns and exit scenarios.
	Exchange rates	Analyze if insurance exchange can delevrages risk of supplies price volatility.
Policy Framework 	Authorizations & legal aspects	Monitor developments in the pertinent legal framework.
	Planning constraints	Consider planning aspects from the start of project development. Engage local population early in the project.



SME perspective – Fundraising tips

Build an outstanding business plan

State your ambition and identify the scale of the opportunity.

Do not allude to risks and challenges; turn them into the opportunity.

Prove that you possess the right skills and network.

Absorbing
Business Plan

Credible Fact Sheet



SME perspective – Fundraising tips

Find the best sources of capital

Detail your financial needs; state how much capital is required, how it would be invested and when you plan to pay it back.

Demonstrate how risk is deleveraged and establish milestones.

Search for investors and lenders who target your portfolio of projects.

Concise
Investment Teaser

Road Show Agenda



SME perspective – Fundraising tips

Formalize debt issuance or dilute your equity

Negotiate a term sheet that does not
cannibalize your business plan principles.

Generate momentum simultaneously
among different sources of capital.

Pick up the best funding sources, balancing
committed liabilities and foreseeing the best
partners for your journey.

Signed Letter
of Intent (LOI)

Debt Agreement,
Convertible Notes,
Shareholders'
Agreement



Investor perspective – minimise risks

Find outstanding and trustful people

Scale business ambition to reality
and identify hidden values.

Consider whether risks and challenges
could become entry barriers.

Verify that the team possesses the right
skills and try to expand their network.

Critically review
Business Plan

Define your
investment thesis



Investor perspective – minimise risks

Tie them to your investment thesis

Ensure that the opportunity is compatible with your capital allocation strategy and has a clear exit date.

Gear procurements and contingencies towards risk deleveraging.

Invest in what you understand; anticipate your potential exit strategies.

Influence Investment Teasers



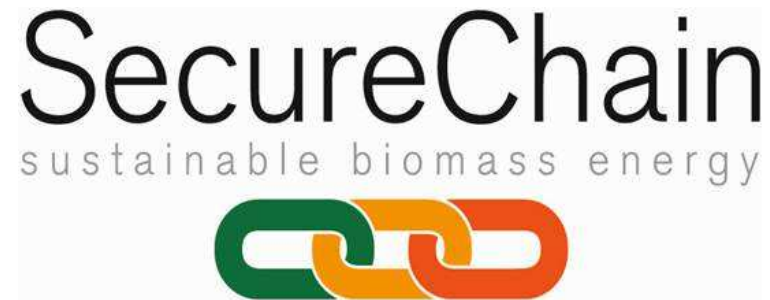
Investor perspective – minimise risks





Learnings & Takeaways

1. Bioenergy as an economic development cornerstone.
i.e. Forest management & rural employability, buildings retrofit, social inclusion, productive uses of energy
2. Legalities and policy frameworks as crucial issues to see the sector uptake.
i.e. Swedish de carbonization public funds vs. Spanish moratoriums (2011) and technology neutrality (2017)
3. Successful Funding Strategies lock in multiple sources of capital
i.e. Private & Public, Banks & Private Equity & Alternatives such as crowd funding
4. Many job to be done to foster SMEs Integrated Reporting (IR) and financiers green/impact investments.



Gràcies Thank you

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