



European Sustainable Chemicals Support Service (ESCSS) Phase I

Ignacio Martín – CIRCE

Edificio CIRCE / Campus Río Ebro / Mariano Esquillor Gómez, 15 / 50018 ZARAGOZA

Tfno. (+34) 976 761 863 / Fax (+34) 976 732 078 / web: www.fcirce.es / email: circe@fcirce.es

ESCSS will

- contribute to assess regional readiness for large scale industrial investments on sustainable chemicals
- contribute to develop ambitious strategies in the EU regions to attract investment
- provide advise to the regions that will facilitate the elaboration of bankable proposals for investment.

by providing advisory support services in 2 stages:

- Phase I: Development of a self-assessment tool on sustainable chemicals production readiness of European regions.
- Specific advise to six Model Demonstrator Regions

Time schedule: 18 months (kick-off 12th Feb 2016)

Contractor



Self-Assessment Tool (SAT)



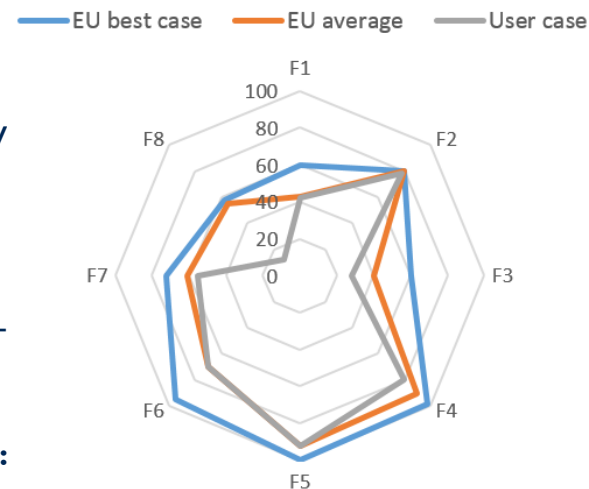
Methodology to perform a **first assessment** of investment readiness level of a region regarding chemical production → to serve as a starting point for regional discussion on how to design better regional strategies

Issues considered:

- Feedstock availability
- Access to finance
- Support institutions
- Entrepreneurship
- Infrastructures
- Skilled workforce
- Regional markets
- Political support

Features:

- Based on 8 factors → 5-10 questions/factor
- Implemented in user-friendly online survey tool in DG GROW website
- Two questionnaires, one per type of feedstock (biomass, waste)
- Answers will be weighted → results presented in spider diagram + modular conclusions
- Database for EU regions to be kept within EC repository: benchmarking + average



Link: <http://5.135.165.138:8080/html/>

ESCSS is supporting the MDR by

providing advise for increasing the investment readiness level on sustainable chemicals production

1. Analysis of investment readiness of 6 MDR → application of SAT

- Data gathering
- SWOT analysis per each factor
- Conclusions, potential actions → 20 pages report to influence regional Master Plans

2. Organization of a two-day peer review meeting in each MDR

- Participation of 10-15 stakeholder regional representatives
- Joint analysis of results of assessment and proposed actions
- Provision of practical cases from good performing EU regions as inspiring examples →

3. Provision of policy briefings on how to stimulate private investments per region

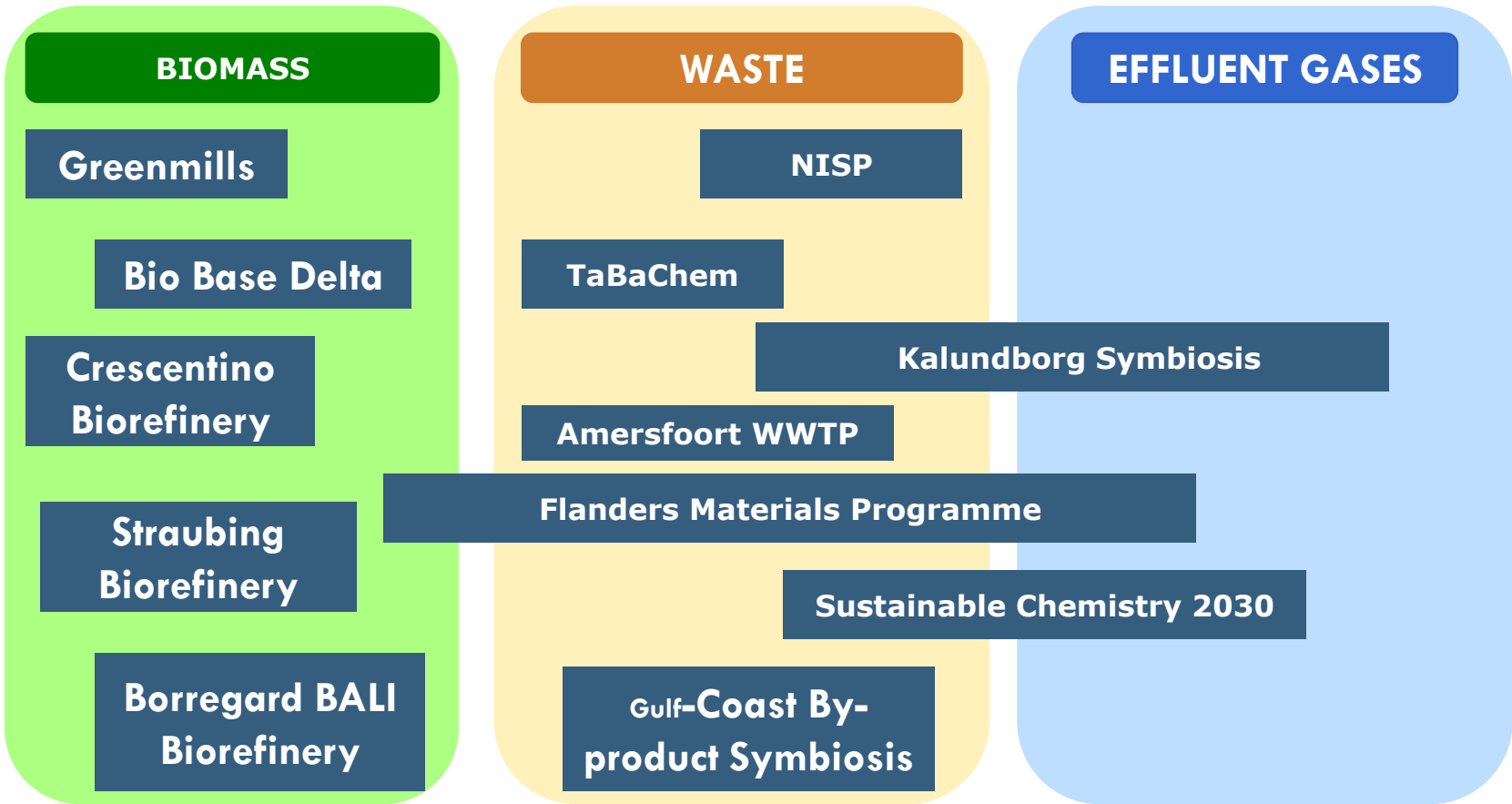
Practical examples

1. Region characteristics, challenges faced and opportunities detected
2. Good practice description
3. Actors involved and roles
4. Impacts achieved
5. Success factors
6. Risk management strategies
7. Funding leverage and investment schemes
8. Replication potential
9. Lessons learned

Status of the project; Investment Readiness Reports

- Reports sent to the 6 regions: Andalusia, Scotland, Drenthe&Groningen, Kosiçe, Irland and Wallonie.
- Structure of reports:
 1. State of play of region
 2. Biomass and Waste SWOT analysis for the 8 Key Factors
 3. Synergies and conclusions
 4. Recommendations and next actions
 5. First impact assessment
- Sources:
 - Questionnaires
 - Documentation (reports) provided by regions
 - Additional information from publicly available sources (public database at regional, national and EU level)
 - Meetings with regions and some stakeholders
- Positive feedback from regions → reports will pave the way to the peer review meetings in December and January.

Good practices examples



Self Assessment Tool

- No need for creation of user and password → SAT free and available to everyone at DG GROW's website
- Identification of the user: type and region
- Questionnaire needs to be done in one time → save and continue not available
- Questionnaire and results can be downloaded in pdf file
- Compulsory to answer all questions
 - User will be notify in case he/she forgot

Developing the questions

- A 3-step approach has been used:

1. Start from **ideal case**/scenario for each KF
2. Identify the **main features** of the ideal scenario
3. Define **5-10 questions** to characterize the situation of the main features in the region → at least 1 question per feature

First drafts had more than 10 questions/KF → validation and filter process → current versions

Two type of questions:

- Single-answer question
- Multiple-choice question

Questions in **cascade** have been used

Questions per KF and Questionnaire

	Biomass	Waste	Effluent Gases
KF1	10/13*	10/16	6
KF2	8/9	6/9	14
KF3	10/11	10/11	11/12
KF4	10/11	10/11	10/11
KF5	8	9	8
KF6	7/9	5/12	6/7
KF7	6	6	6
KF8	9/11	7/8	9/11
Total:	68/78	63/82	70/75

*number of questions/number of questions + subquestions

Developing the answers



- A set of up to 6 answers has been developed for each question
- The answers define precisely but not extensively the range of situations in the feature assessed
- Respondent should easily identify their situation → no neutral or subjective answers
- Open answers or additional information cannot be provided

Weighting mechanism

Each KF is evaluated in a scale from 0 to 10, **summing up** the scores of all questions defined in the KF.

- The score (q_n) of a single-answer question is:

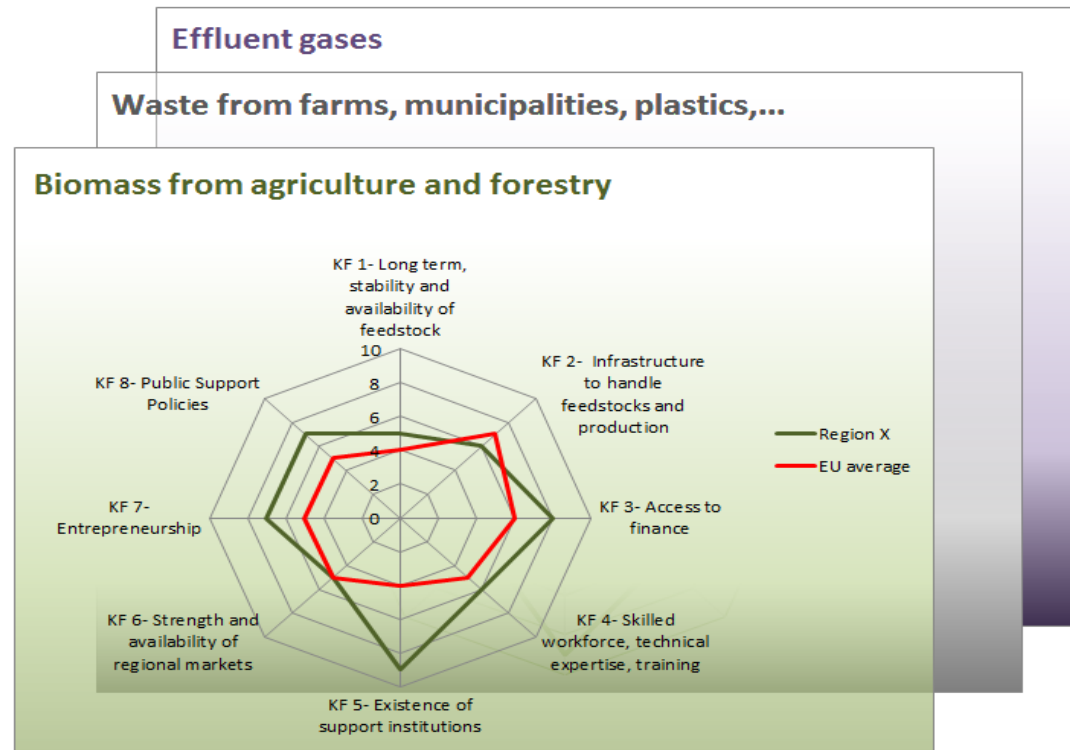
- The score (q_n) of a multiple-answer question is:

$$q_n = \sum_{m=1}^r S_m * W_n$$

where S_m is the value of the answer ($0 \leq S_m \leq 1$) and W_n is the weighting of the question \rightarrow weighting of each question is in relation to the others in the same KF

Presentation of the results: spider graph

- One spider graph per questionnaire
- Graphic representation of scores obtained per KF
- Comparison with average of EU regions



Interpretation of results

- Regions will receive information to help them understand their spider graph → **conclusions and recommendations**
- This information will be provided in an automatic and modular way, based on the answer to the questionnaires.
- C&R provided per KF
- **Two levels** of C&R:
 - C&R coming from a single question
 - C&R coming from a combination of answers from 2 or more questions within the same KFs

Characteristics of the C&R

- From a question or a combination of questions, the C&R will consist of:
 - **A fixed part:** independent of the answer/s → normally an introduction or relevant information related to the main feature
 - **A variable part:** directly depending on the answer/s given to a question/ group of questions → specific recommendation to the region
- The C&R may include **links** to external relevant information (projects, initiatives)
- When the SAT is implemented in the SW tool → connection with **good practices examples** (task 1.2)

Sensitivity Analysis

- Two face-to-face meetings in July for conducting SA of the weighting for Biomass and Waste
- Participants: CIRCE, PNO and CEFIC
- Methodology:
 1. Biomass and Waste questionnaires distributed
 2. Representatives from participants propose weighting
 3. Weighting proposed are compared and significant variations detected
 4. Two possibilities:
 - Question is modified
 - Weighting is modified
- **Result:** more sound weighting for the two questionnaires

SAT internet site



<http://5.135.165.138:8080/html/>



Thanks for your attention – questions?
imartin@fcirce.es

Tel.: [+34] 976 761 863 · circe@fcirce.es
www.fcirce.es

SAT – STEP 1: Welcome

SELF ASSESSMENT TOOL

Welcome to the Self-Assessment Tool (SAT) of the European Commission. The SAT will help you to conduct a first assessment of the investment readiness level in your region concerning the sustainable chemical production. Sustainable chemical production is understood as the utilisation of alternative raw materials – different from traditional fossil-based ones – for the production of chemical products. Specifically, the following three types of feedstock are considered:

1. Biomass from agriculture and forestry: mainly to be processed in high capital and energy intensive installations (e.g. Integrated Biorefineries).
2. Waste from farms, municipalities, sewage sludge, agri-food industry and paper & pulp industry: this feedstock is mainly to be processed in de-centralized installations with a certain degree of industrial symbiosis.
3. Effluent gases, such as CO₂ and CO: mainly to be processed in conglomerates in a typical industrial symbiosis.

SAT – STEP 2: Identification

[Home](#) » Identify your region

Identify your region

Before starting to use the Self-Assessment Tool, please identify yourself as:

Your name : *

Name of your organization : *

Type of organisation : *

If you are responding the questionnaire on behalf of a cluster or a regional authority, please select the option "Cluster" or "Regional public authority"/"Sub-regional public authority" respectively

EU region : *

I hereby declare that I am entitled to represent the organization indicated above *

Send

SAT – STEP 3: Selection of feedstock

Type of feedstock

Please, select the type of feedstock you are interested in

Biomass



Waste



SAT – STEP 4

Introduction to the feedstock...

Biomass

In general terms, biomass feedstocks are commonly produced throughout all the regions in Europe but in many cases are traditionally ignored or are underused because of some of their characteristics (lower energy density than other products, scatter production, seasonality, lower profitability than fossil fuels, etc.). In some cases, these resources are already used for energy or for industrial (bio-commodities) purposes but in many others they are not used and are left where they are produced. These resources can be potentially converted into high value raw materials for the production of chemicals, producing added value products and allowing to decoupling industrial activity from fossil resources. The recovery and use of some endogenous unused biomass feedstocks have a great impact towards a more circular and sustainable economy in a region.

... and options

Support institutions in different levels, from knowledge to public bodies, are also crucial for moving towards a sustainable chemical industry. Therefore, it is important to strategically plan the transition, as well as providing technical assistance and facilitating knowledge transfer in the field of biomass procurement and conversion technologies.

Finally, the influence of existing specific regional regulations and policies related to taking advantage of biomass feedstocks needs to be considered since stable long-term framework is needed for new bio-based businesses and chemicals production.

[download form](#)

[Questionnaire](#)

[back](#)

SAT – STEP 5: Questionnaire

BIOMASS questionnaire

▸ KF1- Long term, stability and availability of feedstock

▾ KF2- Infrastructure to handle feedstocks and production

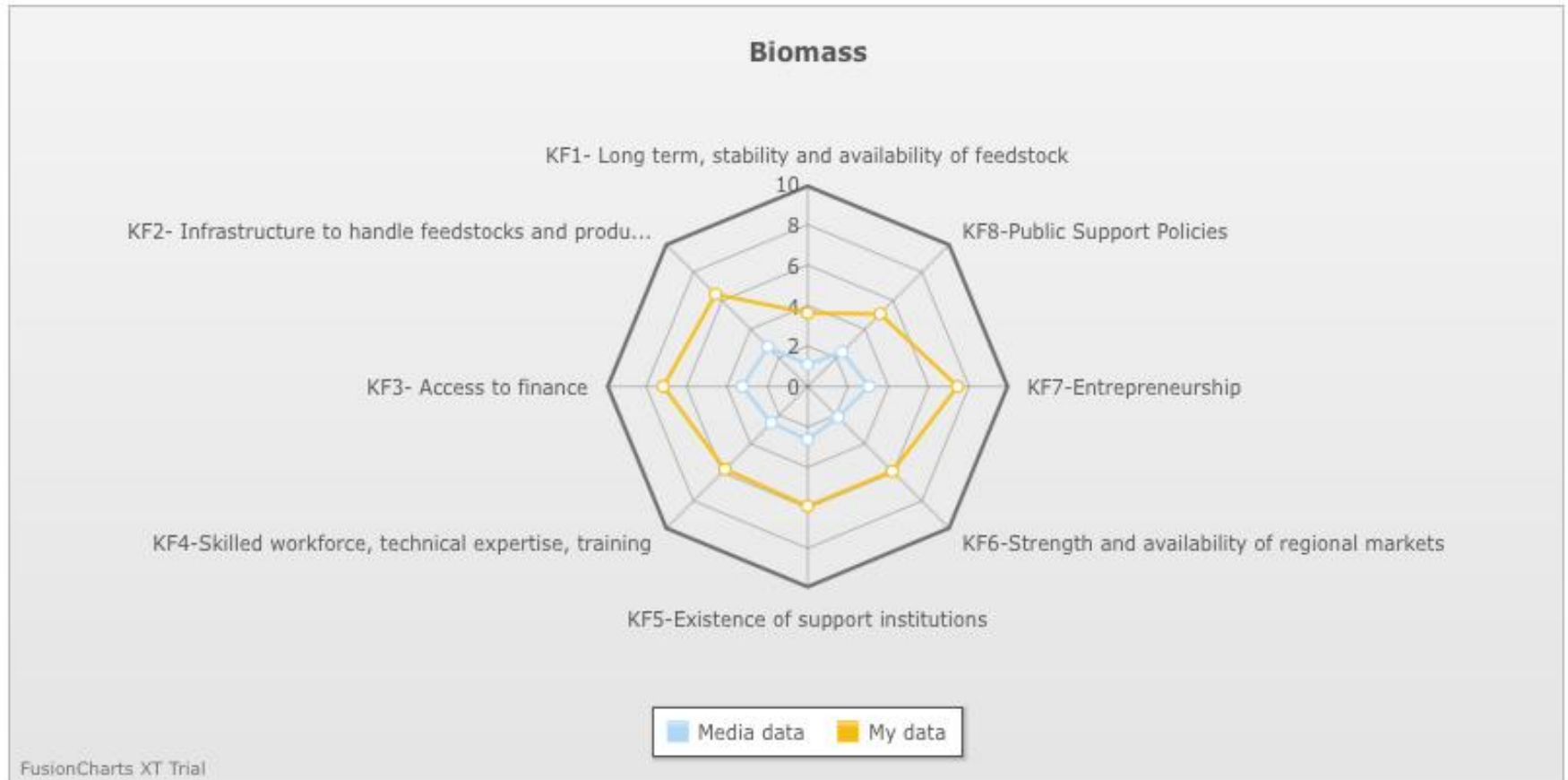
1- Is there a logistics centre operating with biomass feedstocks within your region or close to it?

- a. Yes, it is inside the region but more than 50 km far away from potential biorefineries or bio-based industries.
- b. Yes, it is inside the region and closer than 50 km from potential biorefineries or bio-based industries.
- c. No, it is in other region but less than 50 km far away from potential biorefineries or bio-based industries.
- d. No, it is in other region but more than 50 km far away from potential biorefineries or bio-based industries.
- e. No existent logistic centre in the region or surrounding regions
- f. No information available about these installations at region level.

2- Is the region well connected by road with own/other biomass feedstocks producers?

- a. Motorways and main or national roads could be used to transport biomass resources from the production areas to the industrial sites.
- b. Main or national roads connect biomass production areas and industrial sites.

SAT – STEP 6: Results (I) – Spider diagram



*The average data correspond to 14 replies

[Questionnaire](#)

[conclusions](#)

[back](#)

SAT – STEP 6: Results (II) – Conclusions

KF3- ACCESS TO FINANCE

An appropriate access to finance is of paramount importance if a transition towards a sustainable chemicals production is desired. The adaptation and refurbishment of the existing production sites for using alternative feedstocks – such as biomass or waste – require the installation of new equipment and the modification of the existing processes. Moreover, the realization of concepts such as industrial symbiosis very often implies investments in new infrastructure – like new pipelines – for the exchange of streams between different sites. In many cases, this means costly investments for the promoters that cannot be covered with own funds, particularly when building up a new production site based on non-fossil feedstock, such as a biorefinery.

Both public and private funding can be used to finance this type of projects. In this regard, [financing in your region is available but on very undesirable conditions; several issues need to be tackle for improving access to finance in your region.](#)

Concerning public funding, this can be available from multiple sources: local, regional, national or European bodies have usually direct or intermediate financing mechanism that could be used for fostering the sustainable production of chemicals in different ways.

SAT – STEP 7: Results (II) – Satisfaction questionnaire

Satisfaction questionnaire

1. Do you consider this SAT useful/helpful?

Yes

No

Comments

2. Do you think that this analysis reflects the current situation in your region?

Yes

No

Comments