



**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **The Role of Knowledge and Innovation Communities in the EU Research and Innovation Landscape**

## **BRIEFING NOTE**

### **Abstract**

Knowledge and Innovation Communities (KICs) are highly integrated excellence driven partnerships consisting of business, academic and public sector partners. The KICs are an independent but operational part of the EIT with the aim to deliver economic growth through innovation. The combination of substantial autonomy and high quality partners provide KICs with good potential to become world class centres of excellence.

This document was requested by the European Parliament's Committee on Industry, Research and Energy.

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## **LINGUISTIC VERSIONS**

Original: EN

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Manuscript completed in June 2012.  
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## LIST OF ABBREVIATIONS

<b>CC</b>	Co-location centre (abbreviation used by KIC InnoEnergy)
<b>CEO</b>	Chief Executive Officer
<b>CLC</b>	Co-location centre
<b>Climate-KIC</b>	Climate Knowledge and Innovation Community
<b>EIT</b>	European Institute of Innovation & Technology
<b>ESB</b>	Executive Steering Board
<b>EU</b>	European Union
<b>EU FP7</b>	EU 7th Framework Programme
<b>FCH</b>	Fuels, Cells and Hydrogens (JTI)
<b>FIMECC</b>	Finnish Metals and Engineering Competence Cluster
<b>FPA</b>	Framework Partnership Agreement
<b>FRAND</b>	Fair, reasonable and non-discriminatory
<b>FTE</b>	Full-time equivalent
<b>GA</b>	General Assembly
<b>GMES</b>	Global Monitoring for Environment and Security (JTI)
<b>Horizon 2020</b>	The EU Framework Programme for Research and Innovation 2014-2020
<b>IMI</b>	Innovative Medicines Initiative (JTI)
<b>IP</b>	Intellectual property
<b>IPR</b>	Intellectual property rights
<b>JTI</b>	Joint Technology Initiative
<b>KICs</b>	Knowledge and Innovation Communities
<b>MC</b>	Management Committee
<b>PGA</b>	Partner Grant Agreement
<b>RICs</b>	Regional Innovation and Implementation Communities
<b>SE</b>	Societas Europea
<b>SHOK</b>	Strategic Centre for Science, Technology and Innovation
<b>SMEs</b>	Small and Medium-Sized Enterprises
<b>Tekes</b>	Finnish Funding Agency for Technology and Innovation

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## EXECUTIVE SUMMARY

The Knowledge and Innovation Communities (KICs) are the key instruments under the European Institute of Innovation & Technology (EIT). The KICs have been created to strengthen the innovation capacity of the EU. At policy level, the EIT complements two of the EU's Flagship Initiatives: Innovation Union and Youth on the Move. The KICs have also been seen as potential contributors to regional policy - especially in developing 'smart specialisation' strategies in the regions. At the operational level, the KICs complement existing activities by creating a platform for long-term public-private partnerships. Additionally, the KICs include the education dimension in the innovation partnerships.

The KICs are organised as separate legal entities which focus on areas of high societal need integrating the Knowledge Triangle (namely the higher education, research and business sectors). The new type of organisation and governance of the KICs aims to ensure that higher education, research and business are better integrated in their activities. The thematic areas of the first three KICs, established in 2010, are climate change mitigation and adaptation (Climate-KIC), future ICT (EIT ICT Labs) and sustainable energy (KIC InnoEnergy). The KICs are based on co-location centres (CLC), i.e. a network of local innovation and excellence centres. The idea of co-location centres is to bring diverse teams together in one physical place and to combine competences and skills developed in different areas of specialisation across Europe. They also link collaborative activities of the KIC partners with regional or national centres of excellence.

The KICs' activities comprise four basic components – education, enterprise development, innovation infrastructure and innovation projects. Based on budget information, innovation projects represent the most important activity, covering more than 70 % of the planned expenditure. In the 2010-2012 period, the amount of EIT funding is expected to be EUR 167 million (21.5% of the total budget) for the three existing KICs. The aim of the funding from EIT is to act as a catalyst, and it covers up to 25% of the KICs' budget. Thus, at least 75% of financial resources will be provided by a wide range of public and private partners.

Since the KICs only started their activities in 2010, few outputs have been reported so far. The initial outputs have mainly been in the area of education, where several Master and PhD courses have been initiated. Also, several new business support instruments have been set up and numerous innovation projects have successfully been initiated in line with the objectives set by the KICs. The main added value of the KICs at this relatively early stage is considered to be the strong network which envelops world-class business, educational and research organisations. The leverage effect of the EIT funding for the KICs has also been marginally higher than anticipated. An additional added value has also been the pan-European nature of KICs that decreases the fragmentation of innovation activities.

The KICs seek to exploit the uptake of knowledge and technologies by licensing intellectual property (IP) to interested parties. To support the valorisation of knowledge, each KIC has established an IP policy that defines principles for the ownership of IP and access rights respecting the EU rules. Furthermore, the KICs follow an appropriate internal policy governing the rights and obligations of researchers and students involved in mobility. A specific IP Board is responsible for managing knowledge transfer and IP issues in each KIC.

The KICs differ from similar EU instruments (Joint Technology Initiatives, Joint Programming Initiatives, European Innovation Partnerships and Public Private Partnerships) in certain key aspects; they are specifically focused on solving societal challenges, they have a high degree of autonomy in the governance as well as the content of their activities, and they have a more stable and focused form than programme-funded instruments.

The closer benchmarks to the KICs are to be found at Member State level: the Strategic Centres for Science, Technology and Innovation (SHOKs) in Finland. The leadership, funding model and the bottom-up approach of the two instruments are fairly similar, as is the objective of pooling the expertise of industry and academia in strategic networks.

## 1. INTRODUCTION

The European Institute of Innovation & Technology (EIT<sup>1</sup>) was created in 2008 with the mission to increase European sustainable growth and competitiveness by reinforcing the innovation capacity of the EU. The EIT also aims at addressing the increasingly complex societal challenges set out in Horizon 2020, the future Framework Programme for Research and Innovation. In addition, the EIT's future activities will blend into and contribute to Horizon 2020's overall policy objectives.

The EIT has created specific organisations (Knowledge and Innovation Communities, KICs) to strengthen the EU innovation capacity. The KICs help to create environments in which innovation is more likely to thrive and to renew the way higher education, research, and business actors (the Knowledge Triangle) collaborate. The KICs act as a link in the full innovation cycle, from education and research to innovations and commercialisation<sup>2</sup>. In practice, this is achieved by organising activities that stimulate entrepreneurial education, innovation activities, business creation and value formation through education, research, innovation and entrepreneurial programmes as well as activities contributing to the integration of the knowledge triangle within the KICs<sup>3</sup>.

The KICs integrate the Knowledge Triangle in excellence-driven long-term partnerships that are set up for a period of 7-15 years and spanning various financial frameworks. The stakeholders together create a network of innovation and excellence centres, called co-location centres (CLC). Each of the KICs operates across five or six CLCs and currently there are 17 CLCs spread across Europe. Climate-KIC additionally operates through six regional centres (RIC), each led by a regional/local government partner<sup>4</sup>. The KICs have an independent legal status but at the same time they are part of the EIT and their relationship has a contractual basis<sup>5</sup>.

The first Call for Applications for Knowledge and Innovation Communities was launched in April 2009 and resulted in the selection of the first three KICs, which started their activities at the beginning of 2010. It has been considered that if the KICs prove to be a successful instrument, the total number of the KICs could eventually rise up to 9<sup>6</sup> (an option presented by the European Commission) or 12 (a proposal from the EIT)<sup>7</sup> by 2020<sup>8</sup>. This would enable the EIT to achieve its expected impact on innovation, research and education<sup>9</sup>.

For the 2008-2013 period the EIT has been allocated EUR 309 million<sup>10</sup> from the EU budget and most of this funding goes to the KICs. Through its funding model, the EIT provides approximately 25% of the KICs' overall budget.

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<sup>1</sup> <http://eit.europa.eu>

<sup>2</sup> Commission Staff Working Paper SEC(2011) 1434 final, p. 2

<sup>3</sup> European Institute of Innovation & Technology (2011) EIT's Strategic Innovation Agenda (SIA) Investing in Innovation Beyond 2014

<sup>4</sup> European Institute of Innovation & Technology (2012) The EIT at a glance, p. 1

<sup>5</sup> <http://eit.europa.eu>; Commission Staff Working Paper SEC(2011) 1434 final.

<sup>6</sup> Commission Staff Working Paper SEC (2011) 1434 final, p. 7.

<sup>7</sup> European Institute of Innovation and Technology (2011) EIT's Strategic Innovation Agenda (SIA). Investing in Innovation Beyond 2014, p. 61

<sup>8</sup> There appears to be difference of opinion between EIT and the Commission on expanding the KIC model in the future. EIT proposes in the SIA (p. 61) that there would be 12 KICs established by 2020. At the same time in the Commission staff working paper (SEC (2011) 1434 final, p. 7) it has been argued that «A further expansion beyond the 9 KICs may compromise the principle of world-class excellence, which is a cornerstone of the EIT model».

<sup>9</sup> Commission Staff Working Paper SEC(2011) 1434 final, p. 7

<sup>10</sup> <http://eit.europa.eu/>

This funding is expected to have a leverage effect so that at least 75% of funding will be provided by other public or private partners<sup>11</sup>. This includes funding from the KIC partners but also public funding from the Member States as well as from EU initiatives such as the FP7 (in the future Horizon 2020) and structural funds.<sup>12</sup> The EIT's financial contribution is decided annually based on an assessment of each KIC's performance and a review of their future plans<sup>13</sup>.

The KIC approach is market driven and aims to increase industrial involvement with universities and research centres<sup>14</sup>. It is based on the idea of collaborative networks taking advantage of proximity and close ties. Some activities are performed at KIC level, others at CLC level or both. The different actors of the innovation chain<sup>15</sup> will take part in the KICs' activities (e.g. joint innovation projects and the creation of new markets through internal and external spin-offs and start-ups). The KICs are also expected to operate in a way that supports collaborative interaction across sectors and disciplines<sup>16</sup>.

The KICs currently in operation (Climate-KIC, EIT ICT Labs and KIC InnoEnergy) focus on areas of high societal need<sup>17</sup> by integrating the three sides of the Knowledge Triangle (the higher education, research and business sectors). The KICs enable top-class European education, research and business hotspots to form entrepreneurial and excellence-driven innovation factories. The KICs are also open to non-EU partners and aim to attract students and researchers from outside Europe. Openness is considered both a means and a prerequisite for one of the objectives set for the KICs - to become top European centres of excellence.

The EIT and the KICs complement current EU objectives and instruments as the EIT plays a key role in two of the EU's recently published Flagship Initiatives - Innovation Union and Youth on the Move<sup>18</sup>. The KICs (and especially the CLCs) also hold the potential to contribute to regional policy - especially in developing 'smart specialisation' strategies in the regions<sup>19</sup>. The KICs replenish existing activities by creating a platform for long-term public-private partnerships at the operational level. The inclusion of the education dimension in the innovation partnerships adds further value<sup>20</sup>.

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<sup>11</sup> According to the external evaluation of the EIT (2011), the potential overall leverage effect will be between 5:1 and 4:1 by the close of 2013, which is higher than anticipated. The 25% limit is not set in the legislation but is an internal limit set by the EIT. According to the Strategic Innovation Agenda (2011, p.16) the EIT is not expected to change this limit in the near future

<sup>12</sup> Macilwain (2011) Europe's Innovation Engine, Eager to Grow, Faces Criticism, p. 1090

<sup>13</sup> European Institute of Innovation & Technology (2012) EIT at a Glance, p. 5

<sup>14</sup> European Institute of Innovation & Technology (2012) EIT Triennial Work Programme 2013-2015, p.7

<sup>15</sup> Innovation chain refers to different phases of the innovation process, namely research, education, innovation and commercialisation.

<sup>16</sup> European Institute of Innovation & Technology (2012) EIT Triennial Work Programme 2013-2015, p.3

<sup>17</sup> Namely climate change adaptation and mitigation, the future of information and communication society, and sustainable energy

<sup>18</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 49; Commission Staff Working Paper SEC(2011) 1434 final, p. 2

<sup>19</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 49

<sup>20</sup> EIT at a Glance (2012), p.7; ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 49

## 2. CHARACTERISTICS OF THE KICS

### 2.1. Objectives and Activities of the KICs

The main activities in each of the KICs currently running can be divided into four basic components: Education, Enterprise Development, Innovation Infrastructure and Innovation Projects<sup>21</sup>. The emphasis of the future KIC activities can be estimated from the planned expenditure, which is presented in the business plans of the KICs<sup>22</sup>. The current business plans suggest that 'innovation projects' make up the bulk of planned KIC activity: for example, in 2011, innovation projects cover 73% of all planned expenditure. The share of education activities is around 13%, although the emphasis varies greatly from over 20% in KIC InnoEnergy to 5% in Climate-KIC.

The Enterprise Development and Innovation Infrastructure themes make up 8% of total planned activity for 2011 and their share is expected to remain much the same in 2012 and 2013. The share of EIT funding for these activities is expected to be much higher (around 50%) than for innovation projects. Of the key themes in these areas, particular emphasis is laid on technology transfer, product development and SME engagement<sup>23</sup>. The 2010-2012 budgets of each KIC as well as the estimated expenditure to each activity area for the 2011-2013 period are presented in Annex II.

#### 2.1.1. Climate-KIC

**Climate-KIC** was launched as an initiative of the EIT designed to drive innovation in the area of climate change adaptation and mitigation through an integrated European network of global and regional partners from the private, public and academic worlds. The Climate-KIC aims at significantly accelerating the innovation required for a transformation to a low-carbon economy, and ensuring that Europe benefits from new technologies, company growth and jobs. The Climate-KIC provides the innovations, entrepreneurship, education and expert guidance needed to shape Europe's climate change agenda.

The vision of Climate-KIC is<sup>24</sup>:

- to lead the world towards low-carbon prosperity: Climate-KIC will help innovators to capitalise on new business opportunities driven by Europe's first mover response to climate change;
- to create an emerging climate-change innovation space: Climate-KIC will build the critical mass and forge alliances among existing businesses and new businesses with the aim of creating partnerships that jointly cover all elements of emerging value chains;
- to capitalise on public-private synergies to boost innovation: Climate-KIC will help governments and public agencies to develop effective policy frameworks and to pioneer the early introduction of climate change products and services in collaboration with the private sector.

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<sup>21</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 57

<sup>22</sup> The business plans of the KICs are not publicly available. The data related to the business plans is based on the analysis made in the External Evaluation of the European Institute of Innovation & Technology (2011), p.14

<sup>23</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 62-64

<sup>24</sup> European Institute of Innovation & Technology (2011). Knowledge and Innovation Communities (KICs) Factsheet. November 2011, p. 2

The vision consists of four integrated value propositions that form the basis of the mission<sup>25</sup>:

- creating promising new collaborations and pioneering new value-chain configurations;
- attracting and developing future climate entrepreneurs and climate change agents;
- building platforms to connect and support the wider climate entrepreneurship community;
- creating new pathways to low-carbon prosperity by fostering the conditions for ongoing innovation.

The four high-level themes have been selected based on the criterion that they address topics which are critical to Europe's response to climate change. These are<sup>26</sup>:

- Assessing climate change and managing its drivers
- Advancing adaptive water management;
- Transitioning to resilient, low-carbon cities;
- Developing zero-carbon production systems.

The key functions of Climate-KIC contain four main areas of activity<sup>27</sup>. Education and training programmes encompass master level and PhD level programmes as well as specific educational courses and summer schools for various target groups. Pathfinder projects identify markets and the framework improvements necessary to remove systematic obstacles to climate innovations and replicate best practices. Innovation activities consist mainly of research and innovation projects that are in line with the four high-level themes<sup>28</sup>. The Entrepreneurship programme provides climate entrepreneurs with community facilities (called Greenhouse facilities), services and financial support through its co-location centres. The services include, amongst others, an incubation programme, master classes and a yearly venture competition<sup>29</sup>.

### 2.1.2. EIT ICT Labs

**EIT ICT Labs** is intended to turn Europe into the global leader in ICT innovation. Through its international Nodes and partners, EIT ICT Labs already holds a significant position in the European ICT innovation landscape.

The vision of EIT ICT Labs is as follows:

- Innovation related to ICT will be the key enabler to enhance the quality of life for everyone.

The mission of EIT ICT Labs is as follows:

- Turn Europe into a global leader in ICT Innovation.

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<sup>25</sup> Climate-KIC (2011) Climate innovations for Europe, p. 4; <http://eit.europa.eu/kics/climate-kic/>

<sup>26</sup> <http://www.climate-kic.org/innovations/>

<sup>27</sup> <http://www.climate-kic.org/>

<sup>28</sup> <http://www.climate-kic.org/innovations/>

<sup>29</sup> <http://www.climate-kic.org/entrepreneurs/>

EIT ICT Labs has defined 12 action lines<sup>30</sup> that address key societal issues in a number of selected areas for which ICT can bring forward significant improvements. The action lines are:

- Computing the Cloud;
- Digital Cities of the Future;
- Networking Solutions for Future Media;
- Health & Wellbeing;
- ICT-mediated Human Activity;
- Intelligent Mobility and Transportation Systems;
- Internet Technologies and Architecture;
- Smart Energy Systems;
- Smart Spaces;
- Privacy, Security & Trust in Information Society;
- Doctoral School;
- Master School.

Developing, applying and evaluating *innovation catalysts*<sup>31</sup> are at the core of EIT ICT Labs' operations. The innovation catalysts are mechanisms that address instances of the "knowledge triangle" and the interfaces between education, research and business. Each one is catalytic to innovations and in its own way addresses a specific bottleneck for speeding up innovation and its implementation.

*Carrier activities* are the foundation of EIT ICT Labs' work, to which innovation catalysts are applied. These include co-funded research projects, co-funded educational programmes and business programmes. Currently, the carrier activities related to education consist of doctoral programmes, master programmes, industrial doctoral training, student & teacher mobility, quality assurance and accreditation as well as summer and winter schools and camps. The research activities encompass a mobility programme between co-located research activities, networking (e.g. organisation of thematic workshops and meetings), access to state-of-the art test beds and experience, and Living Labs.

Business support activities cover finance support activities, best-practice benchmarking, Business Club, Entrepreneurs' Club, Entrepreneurship Support System, European SME Program, Innovation Radar and a Technology Transfer Program.

### 2.1.3. KIC InnoEnergy

**KIC InnoEnergy** not only fosters the integration of knowledge triangles, but also strengthens the culture of innovation and entrepreneurship in the field of sustainable energy. Sustainability is achieved by addressing the following topics<sup>32</sup>:

- The reduction of the cost in the energy value chain (supply, transport, storage, distribution and retail);
- The increase of security (autonomy vis à vis the resource holders, intrinsic operational security);
- The reduction of CO2 and other greenhouse gas emissions.

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<sup>30</sup> <http://eit.ictlabs.eu/action-lines/>

<sup>31</sup> <http://eit.ictlabs.eu/ict-labs/catalyst-and-co-funding-model/>

<sup>32</sup> <http://www.kic-innoenergy.com/about-us/key-facts.html>

KIC InnoEnergy has defined specific thematic fields that aim to address the key issues related to sustainable energy and a climate-neutral energy. Each of the six co-location centres coordinates one of these themes for all partners<sup>33</sup>. The thematic fields are<sup>34</sup>:

- Clean Coal Technologies;
- Energy from Chemical Fuels;
- Renewable Energies;
- Smart Grid and Storage
- Smart and Intelligent Cities and Buildings;
- Sustainable Nuclear and Renewable.

KIC InnoEnergy hosts three areas of activity<sup>35</sup>. The first area of activity (Education) consists of the education of MSc, PhDs and Post-Doctorate engineers in the energy fields described above, with strong entrepreneurship and hands-on capabilities.

Educational activities also include a PhD school with several thematic tracks, a Post-Master programme as well as self-assessment learning material and life-long education. KIC InnoEnergy's educational programmes are aimed at the most talented students.

The second area of activity is the Innovation Projects. KIC InnoEnergy facilitates innovation by creating innovative technology for the energy processes, in the form of patents, new products and services through various innovation projects and support services. Currently there are around 30 ongoing innovation projects<sup>36</sup>.

In the third area of activity (Business Creation Services), KIC InnoEnergy facilitates the creation of start-ups and spin-offs as well as businesses' growth in the field of energy, through entrepreneurship support. The KIC InnoEnergy Highway is central to business support activities as a networked incubator with six entry points (one per CC). An entrepreneur can enter the incubator through any of the six CCs and can benefit from the services of the whole network.

## **2.2. KICs system of governance**

The KICs have followed differentiated approaches in building up their strategies and governance structures. One KIC (i.e. KIC InnoEnergy) has been set up as a company while two others (i.e. Climate-KIC and EIT ICT Labs) are non-profit associations<sup>37</sup>. As described below, each KIC has a CEO.

Each KIC consists of Core (or formal) and Associated (or Affiliated or Network) partners. Core partners have signed the first Framework Partnership Agreement (FPA) with the EIT. The FPA defines relations that go beyond the organisation of pure financial flows between the EIT and KICs. These partners are members of the KIC Association or KIC Company and manage the KIC through their membership of the relevant governance bodies. Affiliated partners are other organisations participating in and contributing to the activities of the KIC. They have a contract with the KIC or a specific co-location centre, but are not fully represented in the KIC governance bodies<sup>38</sup>. The KICs apply an open strategy of entry and exit with regard to the Associated partners. The procedure is more complicated for Core partners, since it requires changes in the organisation of the KIC association (or company in case of KIC InnoEnergy).

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<sup>33</sup> <http://www.kic-innoenergy.com/about-us/key-facts.html>

<sup>34</sup> <http://www.kic-innoenergy.com/about-us/thematic-field-leaders.html>

<sup>35</sup> <http://www.kic-innoenergy.com>

<sup>36</sup> <http://www.kic-innoenergy.com>

<sup>37</sup> European Institute of Innovation & Technology (2011) EIT's Strategic Innovation Agenda (SIA) Investing in Innovation Beyond 2014, p.10

<sup>38</sup> European Institute of Innovation & Technology (2012) The EIT at a glance, p. 1

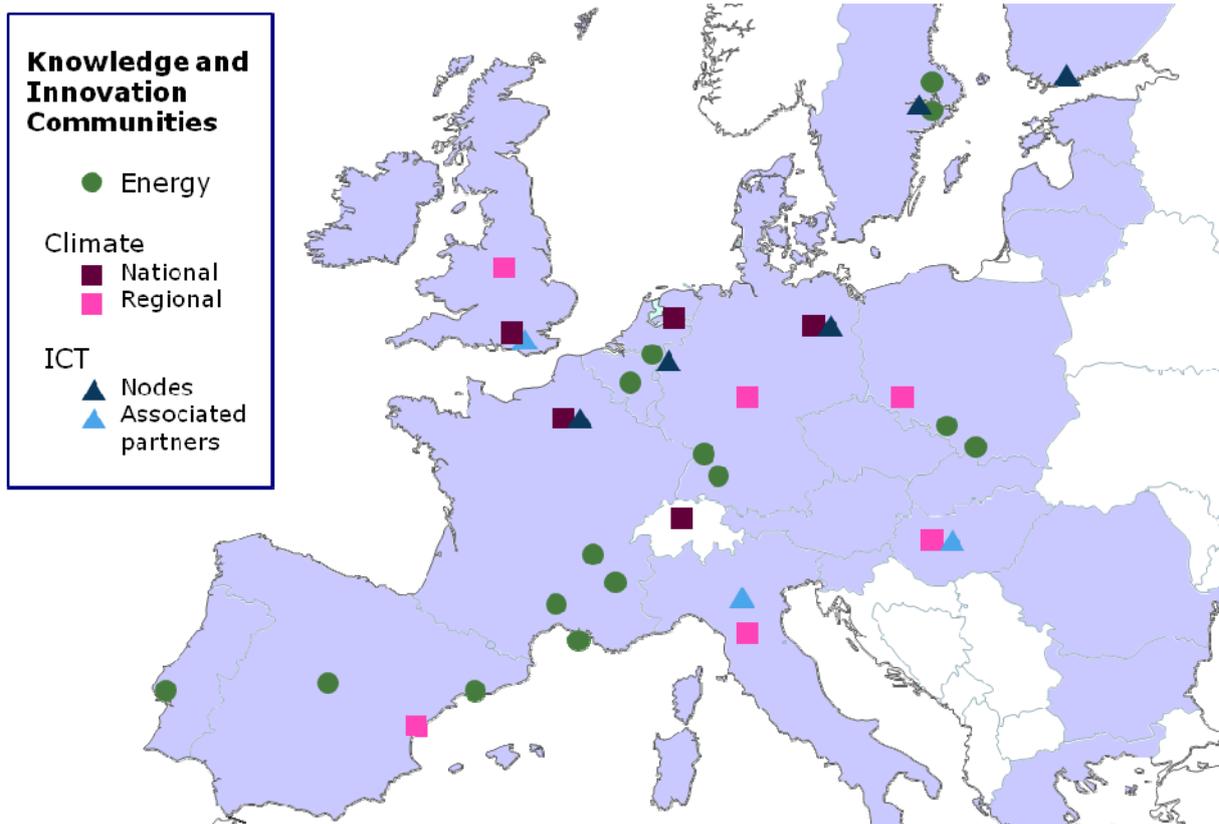
The structure of the KICs is based on the co-location centres (CLC). The CLCs are geographical locations comprising leading universities, research organisations, companies and other support organisations, such as science and technology parks, venture capital firms and other investors.<sup>39</sup> By bringing together geographically separated people, CLCs link the collaborative activities of the KIC partners into regional or national centres of excellence<sup>40</sup>. Currently, there are 17 CLCs in the three KICs and more than 200 KIC partners. The CLCs are mostly hosted by a university partner.

The governance model of the KICs is fairly transparent, as decisions are public and information is shared between the members.

However, the information provided by the KICs to the wider audience is still somewhat limited<sup>41</sup>, especially with regard to outputs as well as basic modes of operation, such as the intellectual property (IP) policy.

The balance of interest between parties also appears to be fairly even with a significant representation of all different parts of the Knowledge Triangle in each KIC.<sup>42</sup>

**Map 1. KICs' co-location centres**



Source: Own illustration

<sup>39</sup> European Institute of Innovation & Technology (2011). Knowledge and Innovation Communities (KICs) Factsheet. November 2011, p. 1; The European Institute of Innovation & Technology (2009) Call for proposals EIT-KICS-2009 Knowledge and Innovation Communities, p. 2

<sup>40</sup> European Institute of Innovation & Technology Triennial Work Programme 2010-2012

<sup>41</sup> See e.g. comments on EIT transparency: European Commission (2011) Public Consultation Report. Report of the Public Consultation on the European Institute of Innovation and Technology (EIT), p. 23.

<sup>42</sup> European Institute of Innovation & Technology (2011) EIT's Strategic Innovation Agenda (SIA) Investing in Innovation Beyond 2014, p.38-39

### 2.2.1. Climate-KIC

The legal form of Climate-KIC is a non-profit association, Association Climate-KIC<sup>43</sup>. At the moment, there are 23 Core partners (stakeholders) in 5 CLCs and 6 RICs comprising 4 companies, 6 research institutes/public entities and 6 universities<sup>44</sup>. In addition, there are 72 Affiliate partners.

Climate-KIC activities are managed by 5 national centres, called co-locational centres (CLCs), spread across Europe. Climate-KIC national centres are located in Paris (France), London (the UK), Zurich (Switzerland), Berlin (Germany), and the Randstad area (The Netherlands)<sup>45</sup> (see Map 1).

The structure of Climate-KIC is somewhat different from the other two KICs. In addition to CLCs, Climate-KIC also features geographically more remote regional innovation and implementation communities (RICs).

The RICs are built around mini-partnerships with a regional basis, involving also government actors. This two-tiered structure and more extensive regional dimension set Climate-KIC apart from the other two in terms of structure. The 6 Regional Innovation and Implementation Communities (RICs) oversee the test phase and implementation of innovations at regional level. All RICs are collectively managed by a single Steering Group.<sup>46</sup>

A full-time CEO and support staff oversee all Climate-KIC operations, strategically steered by a strong Governing Board with representatives of all Core partners. Representatives of all Core and Affiliate partners form the Assembly of the Association. The implementation of Climate-KIC activities occurs at local and regional levels. A centre in Brussels (Belgium) is responsible for the coordination of the 6 regional implementation and innovation communities.<sup>47</sup>

### 2.2.2. EIT ICT Labs

The legal form of EIT ICT Labs is a non-profit association<sup>48</sup>. At the moment, there are 24 Core partners (stakeholders) across six CLCs (or nodes) comprising 10 companies, seven research institutes and seven universities. The nodes are located in Berlin (Germany), Eindhoven (Netherlands), Helsinki (Finland), Paris (France), Stockholm (Sweden) and Trento (Italy)<sup>49</sup>.

EIT ICT Labs has three complementary categories of partners. The Core partners are members of the KIC association. Affiliate partners are other organisations participating in and contributing to the activities of EIT ICT Labs. Associate partners have specific tasks at EIT ICT Labs level that are not addressed by the nodes. These organisations are not linked to a specific node due to their geographical location.<sup>50</sup>

EIT ICT Labs management structure is light and transparent. The General Assembly (GA) consisting of Core partners and Associate partners is the highest strategic decision-making body. The Executive Steering Board (ESB) is formed by two representatives per Node, one from an industry Core partner and one from an academia/research institute Core partner.

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<sup>43</sup> European Institute of Innovation & Technology (2011) EIT Annual Report. Activities and Achievements, p. 6

<sup>44</sup> <http://www.climate-kic.org/networks/>

<sup>45</sup> <http://www.climate-kic.org/networks/>

<sup>46</sup> <http://www.climate-kic.org/about/organisation/>

<sup>47</sup> <http://www.climate-kic.org/about/organisation/>

<sup>48</sup> A not-for-profit Association of all partners with limited liability under Belgian law.

<sup>49</sup> <http://eit.ictlabs.eu/ict-labs/nodes-co-location-centres/>

<sup>50</sup> <http://eit.ictlabs.eu/ict-labs/partners-of-eit-ict-labs/>

The GA elects the representatives of the ESB on presentation by each Node of a list of candidates. In addition, there is a Management Committee that includes the CEO, Chief Scientific Officer, the Chief Operations Officer, the Marketing and Communications Director, the Research Director, the Business Director, the Education Director and the six Node Directors.<sup>51</sup>

### 2.2.3. KIC InnoEnergy

The legal form of KIC InnoEnergy is different from the other 2 KICs (non-profit associations). KIC InnoEnergy is a commercial company, with 29 founding shareholders and incorporated as a Societas Europea (SE). Of the shareholders, 9 are private firms, 7 research centres, 11 universities and 2 business schools. In addition to shareholders, there are 60 'associated partners' and 'network partners'. The current activities are built upon a commitment from shareholders for a period of 7 years.<sup>52</sup>

The partners are regionally mapped in 6 co-location centres (CC) across Europe. The CCs are CC Alps Valley (Grenoble, Lyon, Marseille, and Cadarache), CC Benelux (Eindhoven, Leuven), CC Germany (Stuttgart, Karlsruhe), CC Iberia (Barcelona, Lisbon), CC Poland (Katowice, Krakow) and CC Sweden (Stockholm, Uppsala)<sup>53</sup>.

The partnerships are either Formal, Associated or Network, depending on their contribution to the industrial plan, resulting in different levels of participation in the equity in the different legal structures (KIC or CC)<sup>54</sup>.

Participation in the KIC is basically open but based on a specific selection process. The partners participating in KIC InnoEnergy are chosen on the basis of their compliance with the strategy, roadmap and work plans of the thematic fields. The next selection of new partners is expected to be carried out after the analysis and re-evaluation of the current roadmaps.<sup>55</sup>

## 2.3. Summary of the characteristics of the KICs

The characteristics of each KIC (Climate-KIC, EIT ICT Labs, and KIC InnoEnergy) and their key working methods are summarised in **Table 1** below.

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<sup>51</sup> <http://eit.ictlabs.eu/ict-labs/about-eit-ict-labs/organisation/>

<sup>52</sup> <http://www.kic-innoenergy.com/about-us/key-facts.html>

<sup>53</sup> <http://www.kic-innoenergy.com/co-locations.html>

<sup>54</sup> <http://www.kic-innoenergy.com/about-us/key-facts.html>

<sup>55</sup> <http://www.kic-innoenergy.com/achievements/frequently-asked-questions.html>

**Table 1. Key characteristics and working methods of the KICs**

	Climate-KIC <sup>56</sup>	EIT ICT Labs <sup>57</sup>	KIC InnoEnergy <sup>58</sup>
<b>Legal form</b>	Non-profit association	Non-profit association	Company
<b>Number of shareholders</b>	20 (Core partners)	24 (Core partners)	29 (shareholders)
<b>Number and share of partners</b>	Total 96; 37 universities, 28 research centres, 26 companies, 5 others	Total 63: 30 universities, 15 research centres, 18 leading companies	Total 89: 44 industries, 15 research centres, 28 universities, 2 business schools
<b>Number and location of co-location partners</b>	(6) Paris (France), London (UK), Zürich (Switzerland), Berlin (Germany), the Randstad area (The Netherlands)	(6) Berlin, Eindhoven, Helsinki, Paris, Stockholm, Trento	6 (Alps Valley, Benelux, Germany, Iberia, Sweden, Poland Plus)
<b>Budget (per year)</b>	EUR 117.6 million (2011) <sup>59</sup>	EUR 82.1 million (2011) <sup>60</sup>	EUR 110 million (2011) <sup>61</sup>
<b>Activities / Dimension of the knowledge triangle: Education</b>	<ul style="list-style-type: none"> <li>• Education and training programmes that will instil climate-change entrepreneurship into hundreds of top students and leading practitioners every year by combining climate change science and entrepreneurship with a strong programme of learning-by-doing and of exposure to Climate-KIC innovation activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Robust entrepreneurship education;</li> <li>• Broad stake-holder involvement in educational programmes;</li> <li>• Hands-on experience on innovation and entrepreneurship.</li> </ul>	<ul style="list-style-type: none"> <li>• AdHoc Master of Sciences, PhD Schools or Long Life Learning (for professional in their mid careers), tailored to market needs;</li> <li>• Courses including both generic energy topics and specialisation in at least 1 of the 6 focal topics of KIC InnoEnergy;</li> <li>• Hands-on experience in the industry, entrepreneurship and business cases based on a real industrial need.</li> </ul>

<sup>56</sup> <http://www.climate-kic.org/>

<sup>57</sup> <http://eit.ictlabs.eu/>

<sup>58</sup> <http://www.kic-innoenergy.com/about-us.html>

<sup>59</sup> Climate KIC (2011) Climate-KIC Revised Model Budget as per 28 November 2011, p. 1

<sup>60</sup> EIT ICT Labs Annual Report 2011, p. 37

<sup>61</sup> Estimate. [www.kic-innoenergy.com/about-us.html](http://www.kic-innoenergy.com/about-us.html)

**Table 2. Key characteristics and working methods of the KICs (continued)**

	<b>Climate-KIC</b>	<b>EIT ICT Labs</b>	<b>KIC InnoEnergy</b>
<b>Activities / Dimension of the knowledge triangle: Research &amp; Innovation</b>	<ul style="list-style-type: none"> <li>• Developing a dynamic and open innovation network in addition to managing an integrated network of community partnerships and innovation projects. There are four high-level themes (climate system, water, cities, energy system);</li> <li>• Pathfinder - a platform for businesses, governments and NGOs to identify obstacles to large-scale climate innovation and guide the selection of research projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Mobility programme to allow researchers and engineers to participate in co-located research activities;</li> <li>• Networking such as the organisation of thematic workshops and meetings;</li> <li>• Access to the state-of-the art Test beds and Experience and Living Labs.</li> </ul>	<ul style="list-style-type: none"> <li>• Development &amp; Innovation teams made up of key technicians from the top-rank shareholders are better placed to solve the singular energy requirements with disruptive market impact.</li> </ul>
<b>Activities / Dimension of the knowledge triangle: Business</b>	<ul style="list-style-type: none"> <li>• Incubation Programme which offers a systematic three-stage approach to help entrepreneurs develop, fund and implement business plans;</li> <li>• Starters and Entrepreneurs: Master classes and the yearly Venture Competition.</li> <li>• Incubators are sharing knowledge, quality standards and best practices in the international Incubator Network;</li> <li>• Climate entrepreneur’s community facilities, services and financial support by its co-location centres.</li> </ul>	<ul style="list-style-type: none"> <li>• Access to Finance;</li> <li>• Best-Practice Benchmarking;</li> <li>• Business Club;</li> <li>• Entrepreneurs' Club;</li> <li>• Entrepreneurship Support Systems;</li> <li>• European SME Program;</li> <li>• Innovation Radar;</li> <li>• Technology Transfer Program.</li> </ul>	<ul style="list-style-type: none"> <li>• Business Creation Services, with which KIC InnoEnergy transforms an idea into a business, or helps to create the workflow of “innovation to business” in existing institutions.</li> </ul>

## 3. OUTPUTS

### 3.1. Preliminary results

Contractual arrangements between the KICs and the EIT were completed in December 2010 (KIC InnoEnergy and EIT ICT Labs) and February 2011 (Climate-KIC). This means in practice that the KICs have had a relatively short period to start new activities and as a result, few outputs have been reported yet.

Since the educational programmes are the quickest instruments to produce outputs (as opposed to innovation projects)<sup>62</sup>, many of the results so far have originated from this activity. Some outcomes in the education field have been reported, including nearly 500 students who have already completed their training in summer courses and more than 200 students enrolled on specific KIC-branded Masters courses by the end of 2011<sup>63</sup>. Additional results encompass at least 6 start-ups that have been created with support from the KICs and more than 50 start-ups that were undergoing incubation activities at the end of 2011<sup>64</sup>.

The outputs reported so far for **Climate-KIC** for education are 46 Masters and 31 PhD students as well as 115 Summer school students for 2011<sup>65</sup>. There has also been a 'Pioneers in practice' programme, a mobility scheme attended by 209 individuals, according to the latest information, as well as the creation of e-learning materials<sup>66</sup>. In the innovation activity, 10 new innovation projects were started in 2011, as well as 4 Pathfinder projects. In the business support side, 28 companies have received business advice through the Greenhouse facilities, while 12 SME vouchers were funded. Moreover, a venture competition and an incubator network were established.

The outputs reported so far for **EIT ICT Labs** for education are 268 Summer school students for 2011<sup>67</sup>. EIT ICT Labs Master school was established in 2011 and more outputs are expected in 2012. In the business support system, a total of 21 companies were assisted in 2011 and 4 new ventures were established<sup>68</sup>. In the business intelligence service, a total of 3 foresight reports were published.

The outputs reported so far for **KIC InnoEnergy** for education are 155 Masters level students for 2011<sup>69</sup>. Several events have also been organised. In the innovation area, a total of 32 innovation projects in the six thematic areas were launched in 2011. The first results from the innovation and business support activities include 1 patent, 23 new technology products as well as 52 new ventures nurtured in the Innovation Highway incubator.

EIT has established a specific EIT Scoreboard for monitoring its activities and the activities of the KICs in the future. The first results of the scoreboard are expected in the near future<sup>70</sup>.

<sup>62</sup> Macilwain, C. (2011) Europe's Innovation Engine, Eager to Grow, Faces Criticism. p. 1090

<sup>63</sup> Commission Proposal COM(2011) 822 final, p. 10

<sup>64</sup> Commission Proposal COM(2011) 822 final, p. 10

<sup>65</sup> European Institute of Innovation & Technology (2012) The EIT at a Glance, p. 7.

<sup>66</sup> Climate-KIC Achievements 2011. Unpublished draft.

<sup>67</sup> European Institute of Innovation & Technology (2012) The EIT at a Glance, p. 7.

<sup>68</sup> EIT ICT Labs Annual report 2011, p. 4

<sup>69</sup> European Institute of Innovation & Technology (2012) The EIT at a Glance, p. 7.

<sup>70</sup> For the EIT Scoreboard see European Institute of Innovation & Technology (2011). EIT's Strategic Innovation Agenda (SIA) Investing in Innovation Beyond 2014, Annex X

### 3.2. Objectives

The business plans of the KICs set the objectives for future activities. In education, the KICs are keen to produce a sufficient number of high-quality business-oriented graduates as well as to create synergies with research and start-ups<sup>71</sup>. It has been estimated that a total of 17,300 students will be supported by the KICs between 2011 and 2020<sup>72</sup>. The exact objectives differ between the KICS, which reflects the differences in their approach.

The objective in education activity in 2011-2013 for **Climate-KIC** is 654 students. This is fewer than in the two other KICs, since Climate-KIC focuses its activities less on education and more on research and innovation projects. Other key objectives for outputs in 2011 included awarding at least 20 Greenhouse research stipends and more than 20 SME Innovation Vouchers, as well as funding more than ten proofs of concept<sup>73</sup>.

**EIT ICT Labs** business plan set a target of 1609 students to be achieved by the KIC education activity in 2011-2013. Other expected outputs for 2011 include 6 new ventures and 6 third-party investments, two co-funded carrier activities (collaborative research projects); two patent applications per research (full-time equivalent, FTE) for co-funded research activity; take-up of 3 ICT Labs catalysed products or services; 3 instances of use of ICT Labs platforms (test-beds, labs etc.); and 4 examples of co-located working<sup>74</sup>.

The objectives for **KIC InnoEnergy** are ambitious, especially in education, where the planned educational output for 2011-2013 is 1900 students. For the innovation projects and business services, the 2011-2013 specific objectives consist of 55 new products or services, 37 patents registered, more than 20 spin-offs/start-ups, and 600 scientific publications<sup>75</sup>.

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<sup>71</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 60

<sup>72</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 59

<sup>73</sup> Compilation of results, see ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology

<sup>74</sup> Compilation of results, see ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology

<sup>75</sup> Compilation of results, see ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology

## 4. MANAGEMENT OF INTELLECTUAL PROPERTY RIGHTS

In order to maximise the utilisation of knowledge, each KIC has been required to set up a specific intellectual property rights (IPR/IP) policy<sup>76</sup>. The IP policy defines principles for the ownership of IP and access rights respecting EU rules and is linked to both the business goals of the KIC parties as well as the goal of the EIT to boost EU competitiveness and innovation<sup>77</sup>. In order to assist in this process, the EIT published specific IPR guidelines in 2009<sup>78</sup>.

Each KIC has created its own IP policy<sup>79</sup>. The KICs negotiate to license IP to interested parties and in this way aim to optimise the exploitation and uptake of knowledge and technologies in the KICs. The KICs have also defined an appropriate internal policy governing the rights and obligations of researchers and students involved in mobility. To manage these issues, each KIC has set up a specific IP Board responsible for managing knowledge transfer and IP issues. The main tasks of the IP boards are<sup>80</sup>:

- A policy covering protection, ownership of and access rights to IP, based on principles of fairness and promotion of innovation;
- A method for the identification and evaluation of background prior to starting activities, which should be sufficiently flexible to enable updating of background as necessary throughout a KIC's lifetime;
- A strategy for the direct and indirect exploitation of IP results;
- A formal policy to disclose all R&D results generated among partners, which should not conflict with the protection and use of the results;
- A methodology to assess financial and non-financial contributions from all parties, including contributions from later-entering members;
- Provisions for newly-entering parties to maximise collaboration among the KIC members and to protect the interests of parties involved in the KICs, as well as rules for the departure of partners to minimise disruption to the KIC activities;
- An appropriate procedure for the notification and approval for publication and dissemination activities, considering also the "open access" option for promoting results;
- Appropriate measures to ensure that all KIC members are treated with fairness when negotiations on the assignment of IP rights take place.

For **Climate-KIC** the general principles are defined in the Partner Grant Agreement (PGA) and the more specific policy in the Consortium Agreement of the projects. The tentative guidelines suggest that IP policy is typically decided on a case-by-case basis in each project, although certain main guidelines from the PGA have to be followed.<sup>81</sup>

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<sup>76</sup> Although defining a clear IP policy has been mandatory for the KICs, there is relatively little public information available on how the management of IP has been arranged in each KIC. The information presented in this briefing note is therefore a collection of information gathered from various sources.

<sup>77</sup> <http://eit.europa.eu/kics/>

<sup>78</sup> The European Institute of Innovation and Technology (2009) IPR guidelines, p. 1

<sup>79</sup> The documents on IP policy for the individual KICs are not publicly available.

<sup>80</sup> European Institute of Innovation and Technology (2009) IPR guidelines, p. 1

<sup>81</sup> Source: Interview with Tony Henderson, the Climate-KIC IP Committee representative.

The key principle for **EIT ICT Labs** is the following: IP resulting from work done during and in the context of a fully funded or co-funded EIT ICT Labs R&D activity shall be owned by the partners that conducted the work. Non-sublicensable, non-exclusive access to the results shall be available on fair, reasonable and non-discriminatory (FRAND) or royalty-free terms for partners, which are participants in the same project. Work done prior to the start or independently of an EIT ICT Labs activity will also be available on FRAND terms.<sup>82</sup>

In **KIC InnoEnergy**, the general IP rules are generally the same as in the other KICs; however, a specific 10% royalty of all IP generated goes back to the KIC. Before the project starts, the partners of each Innovation Project declare the IP Background they bring into the project, the planned side ground (IP coming from projects running chronologically in parallel) and the forecasted foreground (what will be produced within the KIC project). By signing the Project Agreement, the participating partners state that KIC InnoEnergy will obtain 10% of the royalties of the IP generated by the project (IP Foreground)<sup>83</sup>. All innovation projects have signed the IP agreement<sup>84</sup>.

Although IP policy is important for managing the ownership of knowledge, there have also been some expectations that the generation of IP would also provide income for the KICs in the future. There is some disagreement among the KIC stakeholders, however, as to the potential offered by Intellectual Property ownership to provide a sustainable income stream for the KICs in the long term<sup>85</sup>.

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<sup>82</sup> EIT-KICS-2009 Proposal: EIT ICT Labs - Towards the Future Information Society. Part B, p. 26.

<sup>83</sup> <http://www.kic-innoenergy.com/achievements/frequently-asked-questions.html>

<sup>84</sup> Pavia, D. (2012) Achievements since incorporation in Dec 2010. Presentation held in the Informal Information Session on the EIT. Brussels, 14th March 2012.

<sup>85</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation and Technology, p. 71

## 5. COMPARISON OF THE KICS WITH RELATED INITIATIVES

### 5.1. Comparison with other EU instruments

The key characteristic of the KICs is that they are partnerships that bring together universities, research centres, small and large companies and other innovation actors on a long-term basis. The KICs often tackle specific societal challenges. They have been given a large degree of autonomy in defining their internal organisation, composition, agenda and working methods, allowing them to choose the approach that is best suited to meet their objectives<sup>86</sup>.

The KICs are intended to complement existing EU instruments, such as the Joint Technology Initiatives (JTI), Joint Programming Initiatives (JPIs), European Innovation Partnerships (EIPs) and Public Private Partnerships (PPPs)<sup>87</sup>. The current thematic areas of the KICs are climate change mitigation and adaptation (Climate-KIC), future ICT (EIT ICT Labs) and sustainable energy (KIC InnoEnergy). The themes of the JTIs are as follows: "Innovative Medicines Initiative (IMI)", "Embedded Computing Systems (ARTEMIS)", "Aeronautics and Air Transport (Clean Sky)", "Nanoelectronics Technologies 2020 (ENIAC)", "Hydrogen and Fuel Cells Initiative (FCH)", and "Global Monitoring for Environment and Security (GMES)". So far, little evidence of the KICs seeking to develop linkages with potential complementary programmes and initiatives has been found. Recently, it was recommended that the KICs should build closer ties to other EU and Member State initiatives seeking to promote common agendas<sup>88</sup>.

As instruments, the KICs are more stable and focused units than JTIs (e.g. EIT ICT Labs vs. Artemis). The organisation of the KICs is different from JTIs and other forms of PPPs. Firstly, each KIC is a single legal entity led by the CEO. The leadership of KICs is clear. The CEO runs the operations of a KIC. Secondly, the KICs are organised around permanent co-location centres in which the partners work together face to face. The system of governance is more compact in the KICs than in the JTIs. The collaborative activities of the KIC partners are built into regional or national centres of excellence. In comparison, the Commission and member countries participate in the JTIs<sup>89</sup>. The diverse structure of the JTIs leads to complexity in the decision-making process. Thirdly, the university is a central player of the KIC. The co-location centres are typically hosted by a university partner. This also adds to the stability of the KIC organisation. In comparison, the universities are not included in the governance of the JTIs<sup>90</sup>.

Another new initiative related to the KICs is the creation of Knowledge Alliances<sup>91</sup> as part of the new 'Erasmus for All' -programme by the European Commission. It is planned that these international partnerships between universities and businesses will develop curricula that promote entrepreneurship and develop other transferable skills<sup>92</sup>. Compared with the KICs, the Knowledge Alliances are expected to be more focused, but at the same time, more numerous. The Commission proposals aim at having 200 alliances established over the course of the programme, involving 2,000 partners. Thus, it is expected that the Knowledge Alliances will promote PPP in a broad front while the KICs are more focused on bringing highest quality resources around strategic themes.

<sup>86</sup> Commission Proposal COM(2011) 822 final, p. 6

<sup>87</sup> See COM(2011) 817 final, p.22; COM(2011) 822 final, p. 12

<sup>88</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 89

<sup>89</sup> [http://cordis.europa.eu/fp7/jtis/faq\\_en.html](http://cordis.europa.eu/fp7/jtis/faq_en.html)

<sup>90</sup> [http://cordis.europa.eu/fp7/jtis/about-jti\\_en.html](http://cordis.europa.eu/fp7/jtis/about-jti_en.html)

<sup>91</sup> Commission Communication COM(2011) 787 final, p. 10.

<sup>92</sup> [http://ec.europa.eu/education/higher-education/knowledge\\_en.htm](http://ec.europa.eu/education/higher-education/knowledge_en.htm)

## 5.2. Comparison with instruments at Member State level

A comparison with practices led in Member States reveals that there are only a few similar types of instruments. The closest benchmarks are the Strategic Centres for Science, Technology and Innovation (SHOK) in Finland. SHOKs are public-private partnerships to boost innovation. There are 6 SHOKs in operation in different fields: Energy and the environment (CLEEN Ltd<sup>93</sup>), Metal products and mechanical engineering (FIMECC Ltd<sup>94</sup>), Forestcluster Ltd<sup>95</sup>, Built environmental innovations (RYM Ltd<sup>96</sup>), Health and well-being (SalWe Ltd<sup>97</sup>) and Information and communication industry and services (TIVIT Oy<sup>98</sup>).

The first SHOK was set up in spring 2007 and the most recent in spring 2009. The Finnish Government is committed to funding the setting up of the SHOKs and research carried out by them. Key public funding providers are the Finnish Funding Agency for Technology and Innovation (Tekes) and the Academy of Finland.<sup>99</sup> The activities of SHOKs are mostly built around research programmes that have been launched at different times. The research activities of SHOKs are long-term, and the main results can generally be expected in 5 to 10 years. So far, some results are, however, already available from the first individual research programmes<sup>100</sup>.

There are a number of similarities between the KICs and the SHOKs. The leadership, funding model and the bottom-up approach of the SHOKs are relatively similar to the KICs model. The legal form of each SHOK is a commercial company<sup>101</sup> and each has a CEO. Both instruments aim at pooling the top expertise of industry and academia in strategic networks. Like the KICs, the SHOKs are networks of a new type that engage in intensive and long-term work to achieve shared goals<sup>102</sup>. The temporal approach to innovation is also relatively similar<sup>103</sup>. The SHOK networks are mainly governed through the research programmes, which are relatively autonomous and independent<sup>104</sup>. In comparison, the KICs work more through individual projects, although they are typically based on strategic themes.

Education is the most important function that separates the KICs from the SHOKs. The KICs also promote entrepreneurship, which is absent from the SHOKs. The wider coverage of activities may prove to be strength for the KICs. This requires, however, the ability to integrate the three components of education, innovation and business support in a synergistic and adequate way. On the other hand, the distance between the co-location centres of the KICs is greater than the space between the closely-knit Finnish SHOK counterparts. Thus, the geographical distance between the co-location centres of the KICs may provide a challenge to the network governance.

It can be concluded that the key feature separating the KICs from other measures is the broader portfolio of instruments. The portfolio encompasses the whole innovation chain from education to business creation. Another distinctive feature is the long-term commitment of the key stakeholders to the KIC activities.

<sup>93</sup> [www.cleen.fi](http://www.cleen.fi)

<sup>94</sup> [www.fimecc.com](http://www.fimecc.com)

<sup>95</sup> [www.forestcluster.fi](http://www.forestcluster.fi)

<sup>96</sup> [www.rym.fi/en](http://www.rym.fi/en)

<sup>97</sup> [www.salwe.fi](http://www.salwe.fi)

<sup>98</sup> [www.tivit.fi/en](http://www.tivit.fi/en)

<sup>99</sup> [www.shok.fi/en](http://www.shok.fi/en)

<sup>100</sup> [www.shok.fi/en](http://www.shok.fi/en)

<sup>101</sup> [www.shok.fi/en](http://www.shok.fi/en)

<sup>102</sup> [www.shok.fi/en](http://www.shok.fi/en)

<sup>103</sup> Lähteenmäki-Smith, K., Uusikylä, P., Haila, K., Eronen, A. & Kettunen, P. (2011) Network governance and the Finnish Strategic Centres for Science, Technology and Innovation. Tekes Review 280/2011.

<sup>104</sup> Lähteenmäki-Smith, K., Uusikylä, P., Haila, K., Eronen, A. & Kettunen, P. (2011) Network governance and the Finnish Strategic Centres for Science, Technology and Innovation. Tekes Review 280/2011.

## 6. CONCLUSIONS

The KICs seek to operate as front-runners in research and innovation by combining the best skills and competences from academia, business and the public sector. The structure of the KICs (a network of co-location centres around Europe) has been designed to support this objective. The KICs allow regions to utilise the best resources in Europe in a way that differs from more traditional practice of organising innovation activity.

The KICs' activities span the entire innovation chain from research to commercialisation, including measures that target education, research and innovation as well as enterprise support and infrastructure. The KICs' activities are also destined to be an integral part of Horizon 2020 – the new Framework Programme for Research and Innovation. The role of the KICs in the new Framework programme can be seen as two-fold. On the one hand, the thematic fields of the KICs specifically contribute to the Horizon 2020 objectives by addressing societal challenges and on the other, the KICs specifically address the role of business in research by partnering the top industry players for long-term collaboration with universities and research institutes.<sup>105 106</sup>

The KIC-model can be basically described as having two new basic dimensions. Firstly, instead of one-off collaborations or clusters led by one key actor, it is based on an idea of long-lasting “innovation platforms<sup>107</sup>” dedicated to facilitating the cooperation between different business players as well as the Knowledge Triangle. Secondly, the KIC-model aims to enhance the full exploitation of excellence around Europe by promoting the creation of pan-European innovation clusters.<sup>108</sup>

The compact system of governance of the KICs has been successful. The set-up of the KICs as autonomous legal entities has given the KICs an opportunity to define their organisation, agenda and working methods more freely compared with more traditional instruments such as the EU Framework Programmes, where interactions are typically based on individual research projects. The new approach is also reflected in the role of the EIT (a long-term investor rather than a grant hander). In the long run, the KICs are expected to become self-sustaining<sup>109</sup>. Even though it is too early to make any judgement on the KICs' ability to fulfil this objective, the initial results are encouraging<sup>110</sup>.

The EIT funding for the KICs is intended to act as a catalyst. If the 25% (maximum) funding share is accompanied by a 75% share from other public and private sources, considerable leverage effect can be expected.

It has been argued that the main added value of the KICs has been their capacity to integrate the partners from research, education and business to work together face to face in co-location centres<sup>111</sup>. The 3 current KICs (Climate-KIC, EIT ICT Labs, and KIC InnoEnergy) have succeeded in bringing together highly qualified individuals and critical mass in their areas of activity with balanced participation from the different components of the knowledge triangle.

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<sup>105</sup> Commission Staff Working Paper SEC(2011) 1434 final, p. 3.

<sup>106</sup> Tataj (2012). The European Institute of Innovation & Technology. Presentation at the ERA conference 2012.

<sup>107</sup> Ernst & Young (2011) Next generation innovation policy. The future of EU innovation policy to support market growth, p 4.

<sup>108</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 88 ; Commission Proposal COM(2011) 822 final, p. 8

<sup>109</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 5,

<sup>110</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 70-71

<sup>111</sup> ECORYS (2011) External Evaluation of the European Institute of Innovation & Technology, p. 69

This is reflected in the quality of the consortia participating in the KICs (e.g. industry leaders and highly ranked university partners<sup>112</sup>), which hold world class potential.

The initial activities of the KICs have focused on education. Setting up new business-oriented Masters and PhD programmes represent the first results. Simultaneously, numerous collaborative innovation projects have been initiated and several business support instruments have been created to support the commercialisation of research and innovation.

As a whole, the KICs have high potential to develop environments in which innovation is more likely to thrive. This requires true collaboration of higher education, research and business actors. The EIT has seen that the results achieved so far have been positive and, as a result, the EIT proposes to extend the overall number of KICs gradually, building upon the knowledge gained in the set-up phase of the initial KICs<sup>113</sup>. In the draft Strategic Innovation Agenda (SIA), published in 2011, the EIT proposes that beyond continued funding for the existing 3 KICs, 3 further waves of new KICs should be established: 3 new KICs in 2014, 3 in 2017, and up to 3 in 2019. The Commission has been more conservative in its estimates and considers that eventually the number of KICs could rise up to a maximum of 9<sup>114</sup>.

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<sup>112</sup> According to the 2011 EIT evaluation (p. 59) in the Academic Ranking of World Universities (Shanghai Index), 8 of the 42 universities involved at the application stage within KICs are ranked within the world's top-100 universities, with a further 4 in the top 200.

<sup>113</sup> European Institute of Innovation & Technology (2011) EIT's Strategic Innovation Agenda (SIA) Investing in Innovation Beyond 2014, p.19

<sup>114</sup> Commission Staff Working Paper SEC(2011) 1434 final, p. 7.

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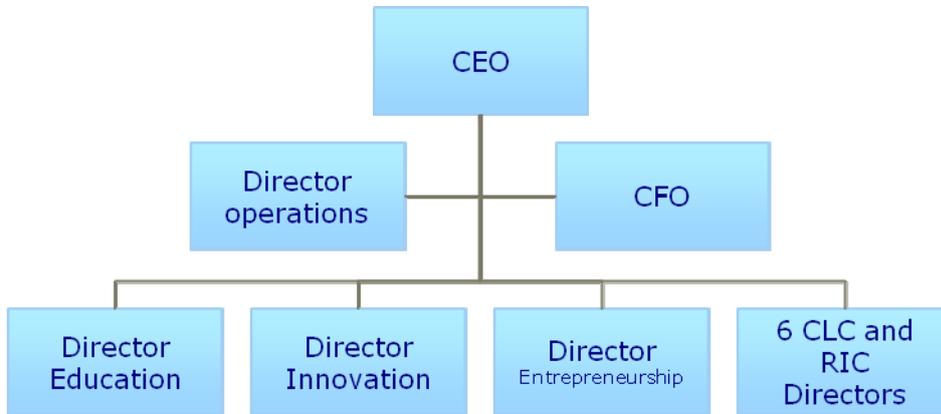
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**Interviews:**

- Interview with Tony Hickson, Imperial Innovations, Chairman of Climate-KIC IP Committee
- Interview with Tony Henderson, Climate-KIC IP Committee representative

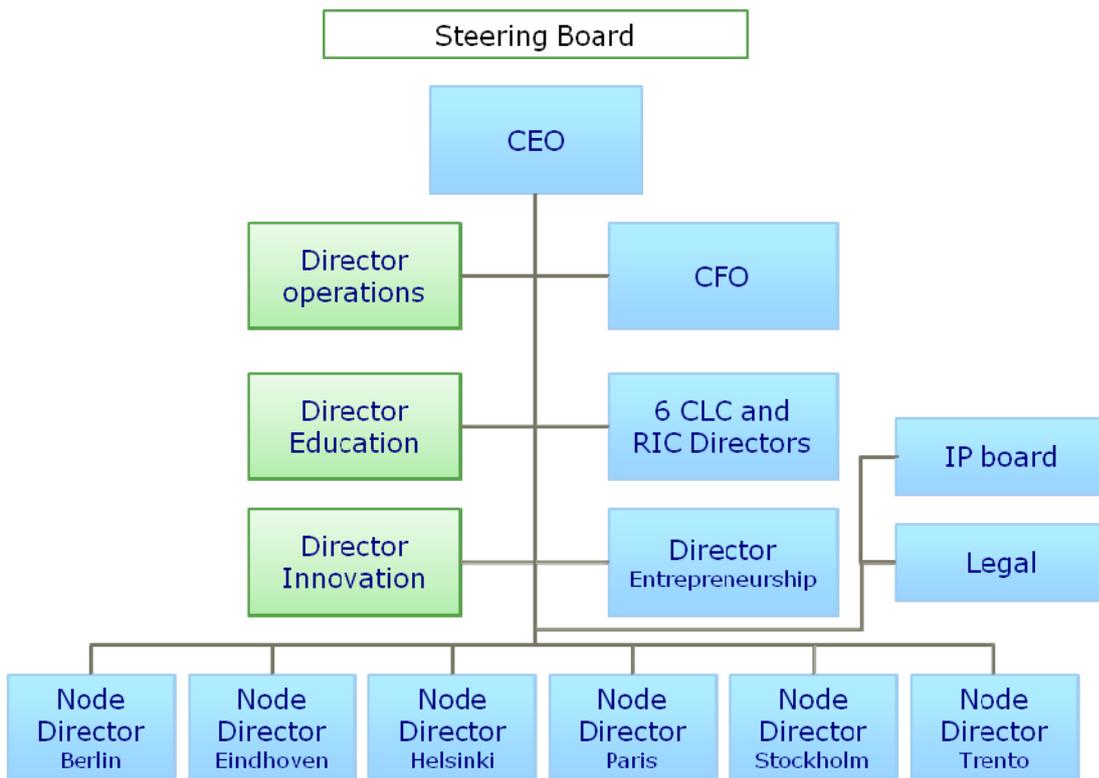
## ANNEX I. THE ORGANISATION CHARTS OF THE KICS

Figure 1. Organisational structure of Climate-KIC



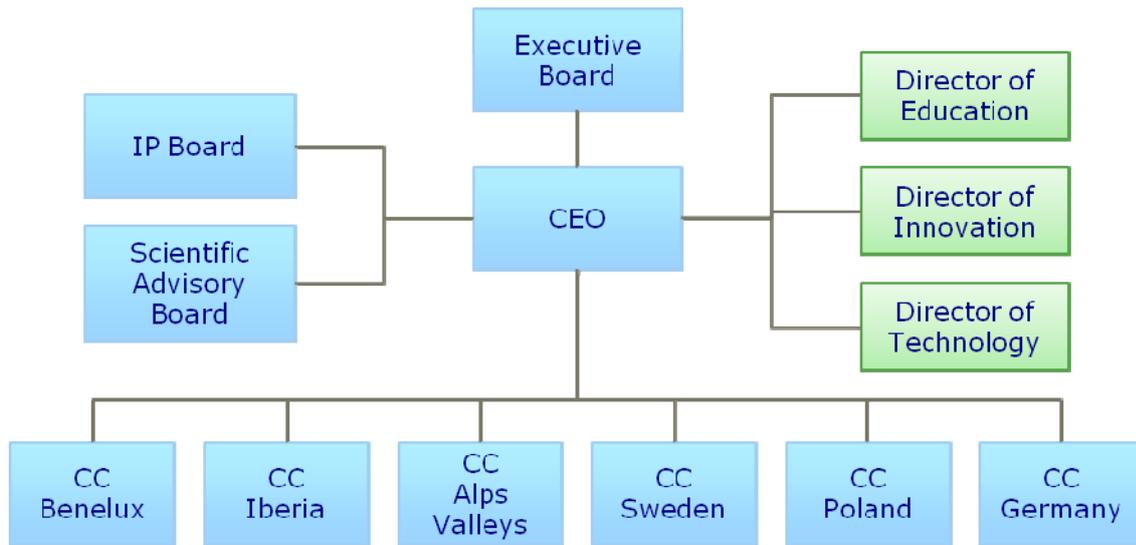
Source: [www.climate-kic.org](http://www.climate-kic.org)

Figure 2. Organisational structure of EIT ICT labs



Source: EIT ICT Labs (<http://eit.ictlabs.eu>)

**Figure 3. Organisational structure of KIC InnoEnergy**



Source: KIC InnoEnergy (<http://www.kic-innoenergy.com/>)

## ANNEX II. PLANNED KIC INCOME SOURCES AND EXPENDITURE

**Table 3. The KIC budgets by income sources 2010-2012 (in millions of Euro)**

	Climate-KIC	EIT ICT Labs	KIC InnoEnergy	TOTAL	%
<b>EIT Grant awarded</b>	44.34	57.02	66.02	167.38	21.53
<b>KIC</b>	71.37	70.69	157.00	299.06	38.47
<b>National / Regional</b>	51.10	62.53	53.56	167.19	21.51
<b>EU / non EIT</b>	54.55	31.44	18.64	104.63	13.46
<b>Other Sources</b>	18.52	4.55	16.08	39.15	5.04
<b>TOTAL</b>	239.89	226.23	311.30	777.42	100.00

Source: EIT at Glance (2012), unpublished.

**Table 4. Planned KICs' expenditure by activities for 2011-2013 (as a percentage of the totals)**

The KICs and their activities	2011	2012	2013
<b>InnoEnergy</b>			
Education	21.5	26.7	24.4
Innovation Projects	67	64.6	68.8
Enterprise	2.1	1.5	1.1
Innovation Infrastructure	3.2	3.4	2.8
Management and Administration	6.2	3.9	2.9
<b>EIT ICT Labs</b>			
Education	13.6	23	25.5
Innovation Projects	73.1	59.6	58.2
Enterprise	7.8	12.9	12.8
Innovation Infrastructure	0.8	0	0
Management and Administration	4.8	4.6	3.5
<b>Climate-KIC</b>			
Education	4.2	5.2	5
Innovation Projects (inc Pathfinder)	80.6	79.8	80.6
Enterprise	9.7	9.8	9.7
Innovation Infrastructure	1.1	1.3	1.2
Management and Administration	4.5	3.9	3.6

Source: KIC Business Plans; External Evaluation of the European Institute of Innovation and Technology (2011)

**Table 5. The proposed budget for existing and possible new KICs for 2014-2020 (in millions of Euro)**

Waves	Indicative N° of KICs	2014	2015	2016	2017	2018	2019	2020
<b>Existing KICs</b>	3	200	250	250	250	250	200	100
<b>1st wave</b>	3	90	140	140	200	250	250	250
<b>2nd wave</b>	3				140	185	200	250
<b>3rd wave</b>	3						140	185

**Source:** European Institute of Innovation and Technology (2011) EIT's Strategic Innovation Agenda (SIA). Investing in Innovation Beyond 2014

The total budget for 2014-2020 in the EIT proposal is EUR 3920 million. In the Commission staff working paper the estimated EU income and expenditure by 9 KICs for 2014-2020 totals EUR 2,800 million<sup>115</sup>. The gap in the figures demonstrates a difference of opinion between the EIT and the Commission on both the future number of KICs as well as the expected budget for the KICs.

<sup>115</sup> Commission Staff Working Paper SEC(2011) 1434 final, p. 9.

# NOTES