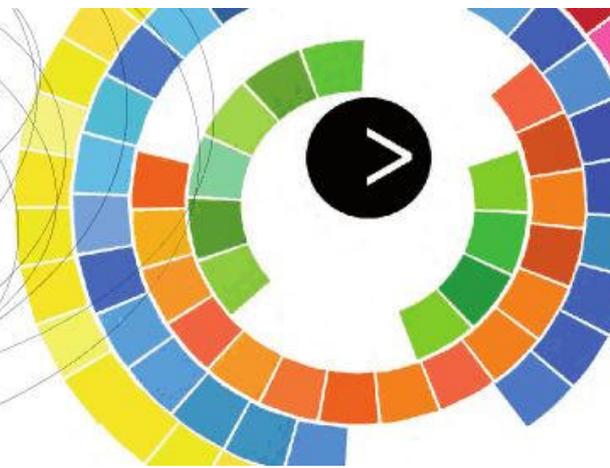


# Fare i conti con l'ambiente

Rifiuti acqua energia

**>Ravenna  
2013**  
25/26/27  
settembre

6<sup>a</sup>EDIZIONE



Thursday, September 26, 2013 Room 7 - Green Room - CCIAA  
Ravenna Via di Roma, 89 – Ravenna

Organized by Labelab

Labelab thank all of the speakers and scientific committee for their excellent, informative presentations and contributions. All speakers have generously made their presentations available online at the Labelab site [www.ravenna2013.it](http://www.ravenna2013.it)

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## **Summary of presentations**

### **1. Introductory remarks (Luigi Bruzzi)**

Since some decades, mainly because of the impact on the environment generated by human activities, programs to collect data affecting the conditions of the environment in which we live were initiated. The environmental changes are relatively fast to the point that you realize their influence when the consequences are already being felt and sometimes they create a very difficult problems to govern them. There is a growing need to know the conditions that threaten our health and the environment. The need to measure in quantitative terms the quality of the conditions in which we find ourselves is becoming imperative. The first step is to characterize an environmental system consists in identifying the indicators able to respond, in a meaningful and accessible way, to all members of society first of all stakeholders. A first set of indicators is used to qualify the essential resources for life such as air and water; special attention is paid to the protection against various forms of contamination. The use of quality indicators has been gradually extended to numerous environmental components, such as soil, radiation of various nature, biodiversity, etc. In addition to typical environmental indicators, parameters of social and economic relevance have been analyzed, such as factors affecting health, income, landscape, etc. In recent decades the environmental indicators got a growing attention; more recently sustainability and well-being indicators are being introduced, the latter mainly directed to the conditions of satisfaction of human life.

### **2. Air quality priorities in Europe (Maria Betti)**

In a world in constant change due to human activities there is a growing need for a policy of control of several parameters that affect the quality of life and environment in which we live. Recent studies show that, for every situation that undergoes a change, is possible to measure the magnitude of this change through the measurement of certain variables which assume the meaning of quality indicators. The ultimate goal of these measures is the fact that such changes do not cause damage to health and environment. Nowadays it is well known that the introduction of certain gases into the atmosphere (CO<sub>2</sub>, CH<sub>4</sub>, CFCs, nitrous oxide and atmospheric pollutants) cause not only damages to the human health and to the environment but also generate an increase in temperature of our planet that can produce the so-called global warming. The international conference has highlighted the multiplicity of indicators monitored in the areas of water resources, air quality, energy. Special attention has been paid to the issue of air quality, pointing out that 2013 has been declared by EU the Year of air. The opening keynote held by Maria Betti Director of the Institute for Environment and Sustainability , Joint Research Centre , European Commission is devoted entirely to the theme of “Air quality priorities in Europe”. According to the presentation air quality is a core concern of European citizens and remains an important environmental issue. In 2013 a public survey managed by DG Environment showed that 56% of the Europeans think that air quality has deteriorated in the last 10 years and only 16% that has improved. The EU is densely populated and by 2020, 80 % of the EU population is likely to live in urban and periurban areas. Most cities face a common set of environmental problems, including poor air quality and have become the areas where people, particularly sensitive or vulnerable groups, need actions to limit their exposure. The JRC Institute for Environment and Sustainability has many actions that aim to support the EU policy through research on air quality. The Institute supports the implementation of Air Quality Directives and the development of future Air Pollution and Climate policies through international standardisation, harmonizing assessment methodologies, checking the performance of responsible bodies and assisting and advising on monitoring and modeling. The JRC investigates new technologies: new sensors and samplers are used for monitoring toxic and emerging organic pollutants for global earth monitoring, population exposure and impact assessment, increasing capabilities for spatial and temporal assessments. These new techniques offer opportunities for developing new indicators of

urban sustainability. Modelling and scenario analyses are used to assess the effectiveness of policies in reducing air pollution. However, they need validation with real data. For 25 years, the JRC has been running a highly specialised monitoring station, which provides high quality data to European and international monitoring programmes and serves as a specific 'super site' for research with a special emphasis on aerosol characterisation.

### **3. Beyond Gross Domestic Product (Luigi Bruzzi)**

The presentation has discussed the definition and the meaning of indicators and their importance on the ability to properly manage human activities. The attention was focused on those indicators that can measure the sustainability of environmental systems. It should be noted that environmental policies are governed by international regulations that are aimed at the description of the state and evolution of environmental quality: there are significant examples of regulations such as the Water Framework Directive and Marine Strategy Framework. The monitoring of environmental and biological variables indicating the status of the ecosystem and environment has been carried out for many years. The main objective of this monitoring is to detect the trends and to describe their evolution. But how do these data inform us? Are the data collected in a way that allows us to interpret them? With respect to the welfare of human communities the primary parameter taken into account is the Gross Domestic Product (GDP). But GDP only gives partial economic information while disregarding data related to human health, environment and social aspects. New social indicators and indices able to measure the quality of life and environment are required. UNDP proposed the Human Development Index (HDI) at the beginning of the '90 to take into account three indicators: GDP, life expectancy and education. In recent years the development of indicators able to measure the level of the wellbeing has proceeded and important studies have been conducted especially in Europe.

### **4. Water resources (Alice Newton; Johanna Von Toggenburg; Marco Abbiati; Angel Del Valls)**

The water, its resources, its quality, its availability and related indicators have been the object of four presentations that have shown how critical is this problem. Special attention was paid to water quality in coastal areas. The presentations deal primarily with water resources and quality; high attention is devoted to water quality in coastal areas.

Presentation of Alice Newton focus on the necessity to protect water quality and its availability. Looking at our planet from space, it would seem more logical to call it Water than Earth. But the total usable freshwater supply for ecosystems and humans is less than 1% of all freshwater resources, and only 0.01% of all the water on earth. Furthermore, human activities waste, pollute and contaminate this precious resource which is vital for life on Earth. There is a need to preserve water quality and improve its availability by specific campaign of monitoring able to detect the trends and to describe their change in space and time for which we need effective status and evolution indicators.

Johanna Von Toggenburg delivered a presentation on "Good practices to reduce water consumption". First whole the world availability of fresh water is shown: only 2.5% of the earth's water is freshwater out of which 31.4% is accessible for human consumption. The amount of water in the world hydrological cycle stays always the same. However, the availability of water on earth is unequally distributed and therefore people living in some areas are affected by water scarcity more than others. Increased demand for freshwater for personal, agricultural and industrial uses is increasing steadily, driven by an increase of the world population, more developed hygiene standards, increased electricity use and water intensive technologies. To ensure a more sustainable use of water resources, the need has been identified to: reduce water consumption through simple

methods; reduce water losses in distribution networks; collect rainwater for house services; re-use wastewater for agricultural irrigation; adopt a river basin approach.

Marco Abbiati in his presentation recalls the importance of international regulations on water with particular attention to marine and coastal waters; these directives are aimed at achieving a good environmental status of the EU's marine waters and protect the resource. The directives stress the necessity to assess the overall ecological status of coastal and marine ecosystems by analysing hydromorphological, chemical, physical and biological elements. In the last decade this need led to the development of a plethora of Ecological Indicators and Indices. However, bio-ecological elements can be hardly quantified in a single number due to their complexity and variability. On the other hand, managers and policy makers need a powerful and easy tool to assess and compare the ecological status of marine habitats. Indices should be able to measure how close we are to achieving what we set out to achieve. Indeed they are expected to a) summarise environmental trends and integrate environmental information for management; b) provide environmental information to resource managers, users, community and/or the decision-makers. How close are we to the achievement of these goals? We may need an index to assess the effectiveness of the indexes.

Angel Del Valls delivered a presentation on “Indicators and indices of vulnerability of coastal areas: the use of Weight-of-evidence for risk assessment”. This approach is based on the integration of four different lines of evidence. The method has been developed for coastal areas and it is based on sediment quality analysis. It includes, the discussion between the different of two concepts: contamination and pollution. The WOE is based on the correct answer of three-four different questions: What contaminants? What levels? What effects and for human health? Are the contaminants under bioaccumulation and/or biomagnification processes? To answer these questions different Lines of Evidences are described and include: sediment contamination, sediment toxicity under field and laboratory conditions and biaccumulation. Based on the results of the application of these LOEs it is possible to derive different kind of indexes such us: pollution index, sediment quality values, tissue quality values etc. Some of them are described and discusses. Finally, the application of both WOE and indexes are described for a mining spill occurred in Spain some years ago (1998). The application of the indexes made possible a correct design of the WOE that address the extension and quantity of the pollution in the area of the Guadalquivir estuary located in SW Iberian Peninsula, Spain. As part of the description of the WOE application a recent methodology is summarized to describe the risk assessment in a new technology to mitigate the global change: Carbon Capture and Storage.

##### **5. Protect cultural heritage by using adequate indicators (Cristina Sabbioni)**

Cristina Sabbioni has given a presentation dealing with the impact produced by greenhouse gases and air pollutants on cultural heritage. The presentation provides an overview of the work performed on the characterisation of air pollution impact on building materials of historical and archaeological interest. In addition, it deals with evaluating effects of atmospheric gas and aerosol, focusing particular attention on building materials, such as stone and mortars, in view of the evidence of their increasing rates and levels of damage over the last decades, especially in urban areas. The role of particles emitted by combustion process by anthropogenic sources is described showing the data obtained in different aged surface damage layers. How climate change impacts on the deterioration of cultural heritage is also summarised putting into evidence the main results reported in the “Atlas of climate change impact on European Cultural Heritage”, which includes European-based thematic maps related to various degradation processes and connected with climatic parameters under future climate scenarios. Guidelines are also formulated in order to inform cultural heritage managers and stakeholders on the effects of climate change on built heritage.

## **6. Education on sustainability (Filomena Cardoso; Ilaria Noemi De Carlo)**

Two presentations were delivered on the important issue of education on sustainability. It is highlighted the importance of educating for sustainability in every social class, in particular in the younger generations in schools and in the general public. For the educational process adequate tools are needed as well as specific preparation of teachers and educators able to convey messages marked by the ethical principles of sustainability and well-being. It is also recognised the role of higher education on sustainability addressed to specific professional ability. It has also highlighted the need of tools for learning in higher education, such as texts written by international experts, as that described in the presentations given by Paola Rubbi and Ilara Noemi De Carlo.

Filomena Cardoso in her presentation (“How to measure the progress in education on sustainability”) highlights that sustainable development is a complex and evolving concept. Because of that it is hard to define and implement it. At the international level is recognized the importance of Education for Sustainable Development (ESD) and its crucial role towards Sustainable Development, considering it “...not an option but a priority.” (UNESCO, 2005). The ESD decade objectives require the integration of Sustainable Development (SD) values at all levels of education, in order to promote the necessary behaviour changes needed to reach a more sustainable society for all. By nature ESD “... is holistic and interdisciplinary and depends on concepts and analytical tools from a variety of disciplines. As a result, ESD is difficult to teach in traditional school settings where studies are divided and taught in a disciplinary framework”. In countries or communities where informal ESD programs for citizens of all ages coexist with formal education system, the approach seems to have a more effective potential. However, the success in ESD will take much longer and be more costly than awareness campaigns. Due to the combination of complexity and cost, it is important the development of indicators to monitor and measure the progress of the ESD programs and their real effectiveness. This has been a challenge, to find a simple way to measure the progress on ESD. The last outcomes point out that the results in term of Sustainable Development could be inferred from changes in social and policy areas.

Paola Rubbi and Ilaria Noemi De Carlo presented the book “la Gestione Sostenibile dell’ambiente” just translated from Spanish into Italian. Paola Rubbi highlighted the importance and usefulness of the book as a tool able to inform people, not only specialists, but also the general public about the problems affecting the integrity of our lives and the quality of the environment. She spent some words on the importance of knowing the meaning of technical words contained in the book and collected in an appendix of the same book under the form of a glossary.

Ilaria Noemi De Carlo presented the experience gained in translating the essay made working on her translation thesis in collaboration with professor Luigi Bruzzi and professor Francisco Serrano. Specifically, she put into evidence the challenges experienced during the translation of a scientific text, which combines the characteristics of the technical language with those of essays. Being a scientific text, it is about a technical and complex subject, for which it is necessary to read the available literature and create a specific documentation on the handled theme, which is useful for gaining knowledge of the field. Considering the great importance of knowing the technical language and the scientific knowledge while translating, above all if dealing with new disciplines such as the environmental science, it is important to create a terminological database. In the Spanish book, indeed, there is a technical glossary, which has been reproduced in the Italian translation by finding equivalents of the Spanish terms. Moreover, Noemi highlighted the great educational usefulness of this translation assignment, which presents an heterogeneous text and which can open the door to the professional world of translator.

**7. Indicators for urban areas; an index to quantify street cleanliness in Granada (Spain)**  
(Aitana Sevilla, Miguel Luis Rodríguez, Ángela García-Maraver, Francisco Serrano-Bernardo)

Urban surfaces receive waste deposits that create a negative visual impact and are identified as potentially significant contributors to water and air pollution. Several factors might affect the efficiency of the management of cleaning and waste collection services; however, only a few contributions are available in the literature on the various aspects associated with the level of street cleanliness. The presentation shows the suitability of a Cleanliness Index checked for the case of Granada (South of Spain), in order to contribute to the proper management of public expenditure, improving the quality and reduce the cost of an essential service for any municipality. Results have concluded that the city exhibits a good level of cleanliness, although the standard of cleaning varied from one area of the city to another. The Cleaning Index fits well into the general situation of the different districts of Granada and thus, it could be considered a useful tool for measuring the level of cleanliness of the streets of the city and for evaluating the organization of the cleaning service, such that an outsourced company would not be responsible for controlling all the cleaning services.

**8. The Observatories on Sustainability in Spain and San Marino** (Pedro Fernandez Carrasco; Simona Verità)

Two presentations were delivered on a common subject: usefulness of a tool called observatory of sustainability designed and operated with the aim to keep under control all indicators needed to calculate the level of sustainability of a territory.

Last June 2013 the Spanish Sustainability Observatory was closed by the Spanish Government, following the austerity rules. It seems strange or at least curious that an official organism called Sustainable has been not sustainable in a short period of 7 years. It is true that the Observatory has generated worthy reports and valuable information based in a clear methodology supported by a number of indicators. Indicators were validated by specialists and researchers in a wide spectrum of fields. It is also true that the Observatory has failed in a key point, to survive in crises time. At the final evaluation of a project or a policy the indicators will help a lot, not only because they measure real results related to previous defined targets, but also because they are able to verify or discard hypothesis and processes and to adjust and change our targets to other more plausible or realistic ones. This methodology has been applied, for example, from the European Commission in the elaboration of its own sustainability reports "Measuring progress towards a more sustainable Europe 2007 monitoring report of the EU sustainable development" Indicators usually are a quantification of the increase or decrease of the consume of goods e. g. energy. Pedro Fernandez is convinced that the Observatory has reached interesting results. However the methodology based on indicators is not perfect. The indicators make reference to an ideal system adopted as "good" and it is clear that the definition of this system needs many compromises. The system can be good under a cultural or a social view but not under others. It can be good today but not tomorrow, or simply good in some contexts and not in others. The good results of indicators of a process, for example the decrease of energy consume, can be interpreted as good in their context, but does not tell anything about the process. Maybe the process itself, in a wider view, is not the adequate, even not necessary or clearly not sustainable. What can we say about the extinction of the Spanish Observatory and what lessons can we learn from this event? For sure many lessons but a few that at least have called much attention; many of them come from some general misunderstanding about the concept of sustainability. The not existing correspondence from indicators results to euros, that common citizen can easily understand, was one of the key weakness of the Spanish Observatory. Drawing some conclusions the use of indicators by the Spanish Observatory of Sustainability has been a success to understand wrong processes but needs to get influence to change and criticize activities. Also it has failed on the wide spread of the results to the citizens, to add value in euros to these

results and has transmitted wrong concepts about sustainability. There had been small room for different interpretations, there were not dynamic modifications of the criteria and indicators in a way less lineal or rigid on a base of a uncertain framework of what it is good or best. The economy aspect did not reach to what people understand or need to improve their day by day activities. The Observatory and the policy about sustainability of the Spanish Government has contributed to generate a family of reports, by many institutions and companies, that seems to help more to maintain or get a justification of their own activities or process, and not get critical of them. It also has generated a new class of "experts" on writing reports in an environmentally and socially correct formats. It appears sure that new Observatory on Sustainability or similar institutions will be established in a near future in Spain.

Simona Verità delivered the presentation "The Observatory on Sustainability in San Marino: First results". The discussion is focused on the possibility to open and exert a territorial observatory able to keep under control phenomena developing toward a change in sustainability. To make this tool effective specific indicators are needed. The local and global environmental situation is in continuous mutation - mainly due to anthropic activities - and ubiquitous: the quality of air, water and other parameters influencing the environmental sustainability, change very rapidly without a clear perception by the general public, demonstrating that monitoring and interpreting the status and evolution of the environment is imperative. The control of all elements that contribute to worsen the quality of the environment and, consequently, the health of human beings, is currently recognized as essential to ensure the level of excellence of the environment in which we live. The control systems concerning the environmental quality and the level of sustainability require specific indicators and methods, able to evidence the trends in both, positive and particularly important, in negative sense.

Sustainability indicators implemented through a Territorial Observatory on Sustainability (TOS) in the Republic of San Marino intend to offer information to local authorities which are committed to achieving a sustainable model of development, and fulfilling at the same time the purpose of providing evidence about their progress to support the prioritization and allocation of resources. They can be defined, established and monitored through the TOS, which is meant to be a practical tool to analyze the evolution of the environmental situation and sustainability for a given territory.

#### **9. Resources depletion and recycling: indicators and indices (Alessandra Bonoli)**

Alessandra Bonoli delivered a presentation recalling the meaning of depletion of natural resources which can be reduced operating with a number of approaches. There are some indicators to measure the depletion; among them we find economic indicators, with a monetary expression of energy, mineral and forest depletion expressed as a percentage of total gross national income (GNI); physical indicators expressing the consumption rate of today's economy. Some others indicators are reserve based on the extracted mass of a given resource, usually in relation to its deposits. In some cases indicators are based on surplus energy approach. Whatever the method of assessment and the index used, the focus should be moved towards the solution starting from the depletion evaluation reasons. The question is: how is possible now to match our needs and natural resources depletion issues? The answer calls for the capability to rely on the following principle: "The velocity of the extraction and consumption has to be lower than the velocity of the resources regeneration" Raw materials are non-renewable resources; however a sustainable approach is possible in order to postpone the time of expiration, possibly for a very long time mainly by improving and maximizing recycling processes. The last one represent today the best challenge in natural resources depletion issue. In fact simple equations can give an easy approach and perhaps a solution. In Western Europe, 15% of the raw materials (in euros) used for building work and consumer products is obtained by recycling. This means that recycling has become a player in the raw materials sector. In the coming 15 years, the contribution of recycling in the supply of raw materials in Western Europe

must be doubled to 30%, in a general way with some niches that need an higher level of recycling as for instance construction and demolition waste. For this purpose, breakthrough technologies must be developed and all processes and management must be improved towards that direction. Finally, a new social and political approach must be addressed in the sustainability direction and to a new approach in natural resources consumption and saving.

**10. Indicators for Sustainability Reporting within University** (Francesca Cappellaro, Alessandra Bonoli)

An increasing number of organizations aspires to make their operations sustainable and contribute to sustainable development. Since the launch of the Talloires Declaration in 1990, regional and international conferences, higher education associations and intergovernmental organizations such as UNESCO have developed a variety of agreements, declarations and charters to introduce sustainability within university. University has got the opportunity to develop a feedback mechanism for the teaching and research practices through taking action to understand and reduce the unsustainable impacts of their own activities.

In the last year, several networks are increasing with the aim to commit universities to principles of sustainability and give the impulse to start with implementing sustainability into every day processes. Prominent examples of high level are the International Sustainable Campus Network – Global University Leaders Forum (ISCN-GULF). ISCN-GULF has established Sustainable Campus Charter structuring commitments into a nested hierarchy encompassing 3 principles: reduction of individual buildings sustainability impacts, campus-wide planning and target setting, and integration of research, teaching, outreach and facilities for sustainability. The university members of ISCN-GULF engages themselves in the implementation of the three ISCN/GULF sustainable campus principles described above, in the establishment of concrete and measurable goals for each of the three principles and in the production of a report regularly and publicly on their organizations' performance in this regard. In fact, sustainability report is one of the most extended procedure for measuring organizations' sustainability performances and for demonstrating the organization's commitment to sustainable development. Actually, the ISCN-GULF Guidelines provide cross-references between the topics and indicators suggested under each ISCN-GULF Charter principle and established third-party sustainability performance and reporting indicators. These include examples of indicators developed by the Global Reporting Initiative (GRI), and also indicators from the AASHE/STARS system. The Global Reporting Initiative (GRI) is a non-profit, multi-stakeholder organization that strives to provide organizations with a systematic basis for disclosure regarding sustainability performance. GRI has produced a comprehensive Sustainability Reporting Framework that sets out performance indicators that produce comparable information on the economic, environmental, and social performance of the organization. Another initiative is the Sustainability Tracking, Assessment & Rating System (STARS) developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). AASHE/STARS is a self-assessment sustainability framework recently developed for use by North- American universities that proposes transparent self-reporting framework allowing the measurement of relative progress toward sustainability. It is intended to cover the full spectrum from community colleges to research universities, and from institutions just starting their sustainability programs to long-time campus sustainability leaders. The adoption of the sustainability performance indicators recommended by the ISCN-GULF Charter Reports has several advantages with regard to campus sustainability. The identification of quantitative and/or qualitative metrics, performance information assists university in the selection of its own programmatic focal areas or topics to report and in strategic targets for topics selected for inclusion in the reporting period (e.g. a calendar or academic year). Finally sustainability reporting helps university to demonstrate its sustainable campus programs in action and to move the organization closer to the targets identified for the topics selected as priorities.

Sustainability reporting is therefore a vital resource for managing change towards a sustainable global economy that combines long term profitability with social justice and environmental care.

### **11. World energy picture** (Giorgio-Maria Giacomelli; Marco Sumini)

Energy resources and consumption are crucial issues: a considerable factor affecting the world economic crisis is due to energy problems; also the geopolitical stability depends on energy. The latest discovery of huge deposits of oil sales in United States and in Canada has strongly changed the energy panorama. Another important factor come from the industrial sector becoming more and more engaged in green economy largely based on the use of renewable energy sources

Giorgio-Maria Giacomelli in his presentation (“Indicators and indices of energy consumption and saving) analyzes the data on energy consumptions recalling that main energy sources are fossil, and, with the inclusion of oil and gas from oil sands and oil/gas shales, the effective reserves become now considerably greater. The commercial revolution started in 2012 in the US and Canada, is propagating to many other Nations, in particular European Nations. In Italy, Sicily has a major quantity of shales. Giacomelli feels that we should try to use this possibility in the best possible way, keeping intact the environment. A short discussion is made on other sources of energies, pointing out their strength and weaknesses. In the second part a more detailed study is made of the energy consumptions in Italy, of some energy indicators and of the possible perspectives of each source. It is clear that we have to make strong efforts to implement all energy saving techniques and to use all new non invasive technologies for fossil fuels.

Marco Sumini delivered a presentation on “Energy sources decarbonization: indicators and indices) in which some relevant events are recalled. In the last years some relevant events have profoundly changed the energy market: a) the standby of the nuclear energy development after the Fukushima crisis that undermined any perspective for the coming decade; b): the strong development of the gas/oil shales found in USA and Canada; their extraction and production is rapidly changing also many political strategies. In the last years some relevant events are transforming the energy market:

- the new standby of the nuclear energy development after the Fukushima crisis that undermined any perspective for the coming decade
- the strong development of the shale gas search and extraction that is rapidly changing also many political strategies, allowing f.i. the US to look in different areas with respect to the past the Arab oil-based power
- the fast rising costs, mainly for environmental reasons, for new oil sources (see f.i. the Arctic)
- the worldwide economical standby that touch also the so called BRICS and, mainly in OECD Countries,
- an always more deep consciousness of the environmental issues posed by the exploitation of the energy sources, renewable or not, and the need of a new attitude with respect to the emission & global heating driven climate changes that threatens many anthropic activities

What is stepping out is an idea (and the search) of a “smart” solution for global networks for production/distribution of the energy when and where you need it, becoming able to overcome the well-known paradigm of “you can produce it, but you cannot store it”.

### **12. Conclusions**

The contributions presented at the Conference have demonstrated that suitable and useful indicators are needed. The reason are manifold: being able to quantify the quality of the environment and of our life allows to determine the status and the evolution of local and global systems. The validity of this function is motivated not only from a scientific and protectionist point of view, but also as a political tool able to support right decisions. The presentations given at the Conference have highlighted how important is to keep under control strategic resources such as water and air, not

only locally but also globally. Indicators are precious parameters to detect and monitor contaminants in air and water in a planetary context. It is so clear that the control of the quality must be done in the framework of international regulations, in which the role of indicators has a paramount importance. An aspect discussed was the meaningfulness of indicators and the related indices that results strongly connected to their complexity. An interesting subject discussed in the Conference was the role of observatories on sustainability where all data under the form of indicators are continuously monitored. The validity in principle is confirmed, but the feasibility of their constitution and operation is still doubtful. The Conference took also into account the problem of environmental education in different social contexts, such as school, universities and general public. It is recognized its importance in getting positive results toward sustainable development. A couple of presentations were devoted to the energy panorama; the problem is extremely critical; in the last years the energy market started to rely on the huge reserves of oil shales located in USA and Canada; this new situation is reducing the interest of the western countries toward the Arabian territory.