

Sino-Italian Cooperation Program
Environmental Training Community

中-意合作计划
环境培训园地

newsletter 工作通讯

05



Italian Ministry
for the Environment, Land and Sea



VENICE INTERNATIONAL UNIVERSITY

Venice International University

TEN Center, Thematic Environmental Networks

威尼斯国际大学

Isola di San Servolo

30100 Venice Italy

Tel. 电话 +39 041 2719525-524

Fax 传真 +39 041 2719510

ten@univiu.org

Italian Ministry for the Environment, Land and Sea

意大利环境领土与海洋部

Via Cristoforo Colombo, 44

00147 Rome Italy

Sino-Italian Cooperation Program for Environmental Protection

中国 - 意大利环境保护合作项目管理办公室

Program Management Office, Beijing

北京项目管理办公室

Oriental Kenzo-Office Building Room 25 a-d

48 Dongzhimen Waidajie,

100027 Beijing, P.R.China

中国北京市东直门外大街48

号东方银座写字楼25 a-d

房间 邮编: 100027

Tel. 电话 0086-10-51600666, 84476610

Fax 传真 0086-10-84476455

newsletter@sicppmo.org

info@sicppmo.org

Program Management Office, Shanghai

上海项目管理办公室

Room 1901-1906,

The Center, 989, Changle Rd.

Shanghai, 200031 P.R. China

上海市长乐路989号世纪商贸广场1901-1906室

中意环保项目上海办公室

Tel. 电话 021 61104860

Fax 传真 021 61104861

info@sicppmo.org

Editorial Board

Corrado Clini,

Italian Ministry for the Environment, Land and Sea

Ignazio Musu,

TEN Center, Venice International University

Maria Lodovica Gullino,

Agroinnova, University of Turin

Edited by

TEN Center

Thematic Environmental Networks,

Venice International University

Italian Ministry for the Environment, Land and Sea

Project coordination

Alessandra Fornetti

Gianluca Ghiara

Ilda Mannino

Graphic design

peppe clemente, studio cheste, venezia

English proofreading

Lisa Negrello, Venezia

Chinese translation

Dr. Mike Peng, Beijing

Contributions by

Lisa Botter, Helen Ding, Ming Dengli,

Alessandra Fornetti, Gianluca Ghiara, Sara Guerrini,

Wang Haitao, Ilda Mannino, Qiao Yu-Hui, Denise Tonolo,

Gao Xinquan, Francesca Zennaro



Editorial

The Challenge of Implementing Protocols
to Multilateral Environmental Agreements
Gaetano Leone



news and events

on focus

international protocol implementation

The European Union and Multilateral Environmental Agreements
Ludwig Krämer

Italian Strategy to Fulfil the Kyoto Protocol Commitment
Mariano Morazzo

Greenhouse Gas Emissions in China
Li Hongqi, Zhou Binbin

VIU training program

Echo from Participants

Vehicle Emission Control (BMEPB, December 2006 and January 2007)
Multilateral Environmental Agreements (SEPA, January 2007)

Activities Report

Multilateral Environmental Agreements (SEPA, January 2007)
March 2007 VIU Training Activities in China
Renewable Energy (MOST, March 2007 and BMEPB, April 2007)
Waste Management (CASS, March 2007)
Water Pollution Prevention and Control (SEPA, March 2007)

around us

what's next

The Challenge of Implementing Protocols to Multilateral Environmental Agreements

Gaetano Leone, Deputy Director, Regional Office for Europe, United Nations Environmental Programme

Protocols to framework conventions are normally easier to negotiate than framework conventions. If a protocol is to a framework convention like a petal to a flower, sometimes the petal is more challenging than the flower, at least as far as its implementation is concerned. For example, the United Nations Framework Convention on Climate Change: it provides the general principles and institutional tools for tackling the issue of global warming. Its negotiations started in 1988 and the Framework Convention was signed, after four years, at the Earth Summit in Rio in 1992. The negotiation process of the Kyoto Protocol to the same Convention, instead, began in Berlin in 1995 and the Protocol was signed after only two years in 1997. Despite the short time needed for the negotiation, the protocol sets a very late deadline for the implementation. This phase is taking so long that sometimes, rather than to be advancing, the implementation of the Protocol might seem to be receding.

Of course, the institutional setting created by a framework convention shapes an international regime that reduces the transaction costs of multilateral cooperation, providing for meetings, agendas and schedules, and facilitating further negotiations of concrete commitments. This is reflected not only in the case of the climate change regime, but also in its predecessor, the ozone layer regime, with the 1985 Vienna Convention taking longer to be negotiated than the 1987 Montreal Protocol, but whose concrete effects on the environment can be seen in recent years.

One might wonder whether this phenomenon is only limited to the ozone layer and climate change regimes. However, it can also be observed in the field of multilateral agreements for the protection and sustainable development of mountain regions. For example, the 1991 Alpine Convention somehow confirms this trend, with a number of protocols negotiated in a relatively short time, and whose implementation is taking longer than the negotiation process.

What is to be done? While both framework conventions and their protocols are necessary for creating the tools and defining the actions for multilateral environmental cooperation, such as in the case of the 1992 Convention on Biological Diversity, maybe a more forward and creative thinking might be desirable in the setting up of these cooperation processes.

However, while better defined ideas on concrete measures for the implementation of framework conventions might be desirable since the inception of the negotiation phase, this might result in more difficult negotiation processes because of the shrinking of the concerned parties win-sets.

The experience of the Montreal Protocol shows that the implementation of a protocol to a framework convention is challenging precisely because of its concrete commitments, which are what allow us to better protect and develop in a sustainable way our environment. Let's consider at a global level, the importance of the Kyoto Protocol for reducing our emission levels or, at a regional scale, the Protocols to the Alpine Convention for protecting the alpine environment. It will take plenty of time and great efforts to implement them, but the community of states is ready to accept the challenge, and future generations will certainly be grateful.



[editorial](#)

[news and events](#)

[on focus](#)

[VIU training program](#)

[around us](#)

[what's next](#)

Parliament sets up Climate Change Committee

The Conference of Presidents agreed to set up a temporary committee on climate change in a move that follows a similar US-congress initiative. The initiative still needs to be formally confirmed by Parliament as soon as the Committee's mandate is defined. The term of office for the Committee will be 12 months, when it may be extended with Parliament's approval. In addition, temporary committees typically have no legislative power and since their powers are decided as they are set up, Parliament cannot increase nor reduce the scope of those powers.

MEPs back European organic logo

With sales of organic goods growing by 30% a year and production expanding dramatically, Members of the European Parliament (MEPs) have supported the creation of a European "organics logo" which would protect the special nature of organic food. Organic products are those that are grown without fertilizers and pesticides and with respect to the environment and biodiversity. This involves crop rotation and the rearing of "free-range" livestock which are not force-fed hormones or antibiotics. The report adopted by MEPs is in response to a proposed regulation on organic production and food labelling that EU have been considering. The main thrust of the report is the call for a compulsory EU-wide logo for organic



food on all products which satisfy the "organic" requirements. The report also calls for GMOs to be prohibited in the production of organic products and also for a more powerful co-decision role of the Parliament instead of the existing consultative role.

Europe's seas and coasts under threat from climate change and pollution

Protecting the delicate ecosystem of Europe's seas and coastal regions was the subject of a recent hearing in Parliament. A Commission Green paper last year identified the threat to Europe's coast of rising sea levels, pollution and over fishing. This is not a small problem as the EU has a coastline longer than Africa and the EU's sea area is larger than its land mass. If world temperatures continue to increase this will bring rising sea levels, the impact



of which could be serious for Europe. Ironically, emissions from ships are not covered by the Kyoto protocol on pollution. In fact, since 1990 emissions from marine transport have risen 45%, and so far it has been ignored the fact that sea transport emits more CO₂ than air traffic. One possible solution to this problem could be "Marine Spatial Planning", a kind of town planning for the seas. This approach identifies different areas and recommends what activities would be best suited for every region having an impact on the possible development of an anti-global warming policy.

Reducing waste: set targets and less landfill

As the amount of household and industrial waste increases in Europe, EU has been debating two reports on the issue. The



European Parliament calls for more recycling, prevention of waste and a reduction in landfill usage. Currently 49% of municipal waste is sent to landfill sites while 33% recycled or composted. Across the EU, 3.5 tones of waste are produced per person per year.

The first one calls for binding targets to stabilize waste production at anticipated 2008 levels by 2012. It also calls for greater re-use and recycling to reduce pressure on landfill sites.

The second report seeks a “thematic strategy” to deal with the problem. This report calls for a total ban on all landfill waste by 2020. It also asks the European Commission to propose ways of reducing waste and develop measures that would show progress. The benefits of recycling are clear; for example producing paper from recycled waste paper rather than wood saves a quarter of a tone of energy consumption, moreover it is also 75% less polluting to the atmosphere.

EU seeks to fight climate change with taxes

The European Commission wants to present ideas for “Green Taxes” to cut greenhouse-gas emissions. It says that such an ecological tax reform could increase the bloc’s competitiveness by shifting the burden away from labor taxes. EU heads

of state and government committed to reducing European CO₂ emissions by 20% by 2020 compared with 1990 levels – a bold promise, when one considers that Europe is already struggling to meet its current target, under the Kyoto Protocol, of cutting these emissions by 8% by 2012. Currently, the EU’s principal tool to reduce emissions is its carbon trading scheme but the EU will have to find new ways to discourage pollution if it is to reach its ambitious goal. Taxation could provide an answer as it can be used to move producers and consumers away from non-environmentally friendly goods. However, many member states, including the UK, Ireland and many of the central and eastern European countries, remain reluctant to give up their sovereignty in the field of taxation – and any move at EU level would require unanimity-backing from all 27 EU nations. Despite member states resistance to imposing common taxes at EU level, the Commission is looking to get all 27 nations on board by convincing them that such a move is essential to the fight against climate change.

EU seeks higher tax on diesel fuel

Plans to impose a raise in commercial diesel prices, so as to stamp out what it calls “fuel tourism” and cut pollution, are to face stiff opposition from low-tax countries



such as Luxembourg and the central and eastern European member states. At present, there are huge differences between member states’ excise-duty rates on diesel. The Commission has been seeking to resolve this problem for some time, but a 2002 proposal to harmonize tax levels on commercial diesel was withdrawn following member states’ failure to agree to it. The Commission proposed to raise the minimum tax on commercial diesel fuel by nearly 20% over the next seven years in two steps. The proposal has two major aims: to create equal conditions for competition among European road-haulers and coach operators; to help to protect the environment by increasing the overall levels of diesel fuel taxation, which is expected to serve as an incentive for efficient fuel use leveling out differences between member states, so that drivers stop making detours to fill up in countries where excise duty is low, resulting in an increase in greenhouse-gas emissions. But the plan is set to face stiff opposition from those member states with low tax levels, such as Luxembourg and the central and eastern European countries. Transition phases were agreed by the Commission to help countries where diesel is particularly cheap, with the EU’s poorest members set to benefit from the longest periods.

MEPs call for safer shipping rules

Strengthening maritime safety became a top EU priority following the dramatic sinking of two single-hull tankers in less than three years, so the European Parliament’s transport committee voted to strengthen rules aimed at preventing and controlling the effects of accidents at sea and ship pollution.

Rules on catching substandard ships should be strengthened and clarified, according to reports likely to be backed by Parliament. MEPs agreed with Commission proposals to make optional International Maritime Organisation (IMO) rules on flag state obligations mandatory for all member

editorial

news and events

on focus

VIU training program

around us

what’s next



to be set up, with sole responsibility for assistance when disasters occur and with the capacity to take completely independent decisions.

Member states pinned down on poor water record

Directives on nitrate pollution from agriculture and urban wastewater are not properly implemented, though Member states have come a long way in improving water-quality standards since the first European directives were introduced 30 years ago; but more needs to be done if the EU is to achieve its objective of reaching “good quality” status for all European waters.

In a series of reports, the Commission took stock of progress made in implementing EU directives on water quality:

Nitrate pollution from agriculture: the Commission noted that the implementation of the directive remains incomplete in a number of member states and pollution trends vary considerably across the European Union; so considerable further work is needed to improve action programme.

Urban waste water: The Commission said that waste water discharges and nitrates pollution from agricultural origin are seen as one of the key challenges for water protection across Europe; as only 51% of all treatment plants in municipalities located in the EU-15 countries currently meets the standards laid down in the Urban Waste Water Treatment Directive.

Water Framework Directive: Despite member states being on time with progress reports, the Commission notes major deficiencies including poor quality of national laws in 19 member states and the inconsistency of data submitted.

states. As regards Commission proposals to inspect all ships coming through European ports, the committee laid out detailed provisions for strengthening the inspection regime. MEPs also voted to strengthen Commission proposals to increase the liability of ship operators and to compensate third parties and passengers in the event of accidents. It’s proposed that ships that have a high-risk profile and for all passenger and oil and chemical tankers of more than 12 years in age should be subjected to additional inspections, moreover ships that are detained in port more than twice in 36 months could be banned from EU ports. The committee therefore called for a single authority



editorial

news and events

on focus

VIU training program

around us

what’s next

The European Union and Multilateral Environmental Agreements

Ludwig Krämer, Former European Commission

The European Union is not a State but, in the terms of public international law, a regional economic integration organisation. The responsibility for the protection, preservation and improvement of the quality of the environment is shared between the European Union (EU) and its 27 Member States. According to Article 174 of the EC Treaty, the EC aims, among other objectives, at “promoting measures at international level to deal with regional or worldwide environmental problems”. In view of this objective, it is an EC declared policy to adhere to international multilateral environmental agreements whenever this is possible. When such an agreement is negotiated, the EC Council, which is composed of the EC Member States’ governments, is asked to give a negotiating mandate to the European Commission; this allows the Commission to represent the Community at the convention’s negotiations and when such a mandate is given, the EC can participate in the international negotiations. The Commission therefore represents the environmental attitude of the EC and that of the 27 Member States. Normally, the EC Member States are also present during the negotiations, and numerous close concertation meetings take place to interpret the negotiating mandate due to the changed circumstances, and to agree on a common position for the discussions; often, there are several such meetings for each day of the convention’s duration. In case a mandate is not given, EC Member States and the Commission negotiate themselves the international agreement. However, also in such cases, the Member States and the Commission concert and agree their positions, in order to speak, if possible, with one voice during the negotiations.

Once an international environmental agreement is concluded, it is signed by the EC, if the Council has given its authorization – which normally is the case. EC Member States sign the international agreement according to their own policy.

The EC policy to adhere possibly to all international multilateral environmental agreements refers, of course, mainly to global agreements. The policy is different with regard to regional environmental agreements, as, for obvious reasons, regional agreements, for example in Latin America, are normally not of interest to the EC. Therefore, regional environmental agreements are negotiated by the EU/EC as such, when the European region or the EC has a specific interest to become party to such an agreement. An example of the last case is the adherence of the EC to the International Dolphin Conservation Programme which is a regional agreement of the East Pacific region that tries to protect dolphins from being killed during fishing activities. As the EC fishing vessels regularly fish in the Eastern Pacific, the EC adhered to the Programme.

A new decision by the EC Council is necessary to make the EC become a contracting party of an international agreement; the Council may only take such a decision upon a proposal of the European Commission. Of course, this is only possible when the international environmental agreement is also open to regional economic integration organisations. This is not always the case, in particular not as regards to earlier international agreements. For example, the Convention on International Trade in Endangered Species (CITES) or the International Whaling Convention are only open to States.

An international environmental agreement, to which the EC adheres, becomes binding on the EC and on its Member States (Article 300 (7) EC Treaty). Thus, the international agreement becomes part of Community law. As such, it is binding on all 27 EC Member States, even on those who did not become a contracting party of the agreement. The reason is that the EC, by adhering to the agreement, commits itself towards all other contracting parties that the agreement’s requirements will be respected throughout the territory of the EC.



editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

Before questions of implementation and enforcement of an international environmental agreement are discussed, the EC general provisions have to be remembered. Measures which are decided at EC level must be implemented and enforced by the EC Member States (Article 175 (4) EC Treaty). However, the Commission has the task to ensure that EC environmental law is applied (Article 211 EC Treaty). The EC does not follow a consistent line with regard to the implementation of an international environmental agreement to which it has adhered. In numerous cases, the EC adopts a specific EC regulation which transposes the requirements of the agreement into EC law. An EC regulation is of general application; it is binding in its entirety and directly applicable in all Member States. By adopting such a regulation, the EC thus ensures that the provisions of the international agreement are applied in all EC Member States. If it discovers that a specific provision is not applied in a State, the Commission may start legal proceedings against that State and eventually bring it before the European Court of Justice. However, not in all cases has the EC adopted legislation in order to transpose the provisions of an international environmental agreement into the European legal order. For example, the EC has not taken any specific measure to transpose the Convention on Biological Diversity or the (regional) Convention on the Protection of the Alps into EC law. The argument which is given for this attitude is often that EC law already complies in substance with the requirements of the agreement. However, this argument is doubtful and would certainly not apply to all provisions of all agreements. The difference of attitude has far-reaching important consequences. While the EC Commission controls, by virtue of the above-mentioned Article 211, the application of EC legislation in and by the EC Member States, it does not monitor or control the application of the provisions of an international environmental agreement, where no transposing EC legislation has been adopted. This means that it is left at the discretion of the EC Member States, whether or not to comply with the provisions of that international agreement. This practice is not in conformity with the commitment made by the EC through its adherence to the agreement. A practical example might help: suppose that the EC Member State X has not adhered to the Convention on Biodiversity, this Member State will not take measures in order to comply with the Convention's requirements. It was described above that the EC's

adherence to the Biodiversity Convention means that the Convention's provisions apply in all EC Member States. However, when the EC Commission does not ensure that the provisions also apply in the Member State X, it would be an illusion that this State would apply those provisions despite the fact that it had not ratified the Convention.

A concrete example might illustrate the EC implementation practice. The Stockholm Convention on Persistent Organic Pollutants (POP Convention) provides for the ban of certain hazardous substances. It also provides that certain substances which are unintentionally released, PCDD and PCDF in particular, shall be reduced by means of technical measures (see for details Article 5 of the Convention).

The EC adhered to the POP Convention and adopted an EC Regulation on persistent organic pollutants. This Regulation refers to the substances' unintended release described in the Convention. In order to reduce the substances' release, the EC refers Member States, among other measures, to the application of EC Directive 96/61 on the integrated pollution prevention and control. This binding piece of legislation which applies to some 20.000 industrial plants in the EC requires the use of best available techniques. In order to establish what the best available technique for a specific industrial sector is, the EC set up a forum, where the representatives of industries, administrations, environmental organisations and others meet and elaborate for each different sector, the so-called BREF-documents (best available reference documents) which frequently have a volume of several hundred pages and discuss the different available techniques for industrial sectors – including the possibility to minimise the unintentional release of the substances PCDD and PCDF. These documents serve as guidelines for industries and in particular also for administrations which have to give permits to new plants and to monitor the practical use of the techniques and the emissions of existing plants. The BREF-documents are regularly revised and contribute thus to put into operation the rather sophisticated requirements of the POP Convention on the unintentional release of some persistent organic pollutants.

Overall, the EC is an active participant in the negotiation of international environmental agreements; it tries systematically to become a party of such agreements and undertakes, in general, serious efforts to implement international conventions.

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Mariano Morazzo, Italian Ministry for the Environment, Land and Sea

Italy has committed to reduce greenhouse gas emissions by 6.5 per cent below base-year levels, on average, over the first commitment period of the Kyoto Protocol, 2008-2012. This is assumed to be an average of 485.7 Mt CO₂ equivalents a year in 2008-2012 on the basis of available emission data. This commitment is a real challenge considering that Italy has one of the lowest energy intensities (energy input per unit of GDP) among industrialised countries. However Italy has decided to commit to such ambitious goal because it recognises that if climate change is not tackled seriously, the consequences will be very damaging for global environment, economy and security. The agreement on binding quantitative emission reduction commitments was signed in Kyoto in 1997 as a Protocol to the United Nations Framework Convention on Climate Change. The Convention was signed in 1992, and has become effective in 1994. The final objective of the Convention is to stabilize greenhouse gases concentration in the atmosphere, promoting actions at national and international level, but it does not set quantitative emission reduction targets, but only a political will to limit emissions at 1990 levels by 2000. In this context the first actions to combat climate change were taken in Italy in 1994, when CIPE approved the National Programme for the Containment of Carbon Dioxide Emissions at 1990 levels by 2000. Since that time, Italian government has aimed at limiting its greenhouse gas emissions and regularly updated the national programme to reduce greenhouse gas emissions. In 2002 following the ratification of the Kyoto Protocol (Law n. 120, 1 June 2002), an overall national strategy to meet the Kyoto target was developed.

The centre-left coalition government in charge since May 2006 has strongly reaffirmed the political will to achieve the emission reduction commitment under the Kyoto Protocol and has launched the review of the

national strategy that at the moment is still ongoing. Some steps have already de facto been taken by the government with the approval of the National Allocation Plan of CO₂ allowances for the 2008-2012 period in the framework of the “Emission Trading” Directive and with the 2007 Financial Law. In fact these two provisions have been inspired by a revised strategy to reach the Kyoto target, even if not yet formalized. The review will also include the update of national greenhouse gas emissions projections and the description of the additional policies and measures to be implemented to meet the Kyoto Protocol target. The Government had already explicated in its electoral program the general approach to achieve the Kyoto target, consisting in the implementation of domestic policies and measures for at least 80% of the reduction effort and in the use of the Kyoto mechanisms up to 20%. Considering that the reduction effort to fulfil the Kyoto target, calculated as the difference between the *reference scenario* and the target, is 101.6 Mt CO₂ eq/yr, this means that at least 81.3 Mt CO₂ eq/yr emission reductions have to be achieved through domestic policies and measures (including domestic sinks and the national implementation of the EU Directive 2003/87/EC on the establishment of an emissions trading system within the Community).

Table 1 – Contributions to the fulfilment of the Kyoto Protocol target

| | | [MtCO ₂ eq/year] |
|--|--|-----------------------------|
| A | 2010 emissions in the reference (“with measures”) scenario | 587.30 |
| B | Kyoto target | 485.70 |
| C=A-B | Gap | 101.60 |
| Available instruments for covering the gap | | |
| D | Purchases of Kyoto credits (CERs/ERUs) | 19.00 |
| E | National sinks | 16.20 |
| F | Policies and measures in non-ETS sectors | 42.15 |
| G=C-(D+E+F) | Reduction in Emission Trading Sectors | 24.25 |



editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

Table 1 provides the details of the contributions to the fulfilment of the Kyoto target. As the revision of the government's strategy has not yet been finalized, this information is subject to slight changes.

Purchases of Credits from Kyoto Protocol Flexible Mechanisms

The target for government use of the project-based mechanisms is 95 Mtonnes CO₂ eq over the 2008-2012 commitment period. The Ministry for the Environment, Land and Sea acts as National Authority (DNA) for CDM and as Focal Point for JI in Italy. The Ministry has granted Letters of Approval to Italian companies for CDM projects in China, Argentina, India and Nigeria. A number of instruments are being deployed by the Italian Government in order to acquire Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs). Firstly, in order to stimulate the implementation of CDM and JI projects, voluntary and not legally binding Memoranda of Understanding (MoUs) have been signed with some Host Countries: Albania, Algeria, Argentina, Belize, Brazil, China, Congo Brazzaville, India, Israel, Macedonia, Morocco, Mexico, Montenegro, Nigeria, Panama, Russia, Serbia, Tunisia, Uruguay. Secondly, the Government is participating in the World Bank's Community Development Carbon Fund (CDCF) with a contribution of \$7 million and in the BioCarbon Fund (BioCF) with \$2.5 million. In addition, a partnership agreement has been signed with the World Bank for the establishment of the Italian Carbon Fund (ICF). This Fund was declared operative in March 2004 and, to date, has a total capitalisation of \$156 million.

National Sinks

Policies and measures that are aiming at increasing the sequestration potential in Italy for the use of sinks refer mainly to forestry activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol¹. Such policies and measures are listed in the following table:

Potential carbon sequestration due to forest management activities has been estimated taking into account Italy's total eligible area² and the total carbon stock change in carbon pools during the 2008-2012 period; it then corresponds at the expected net growing of the existing forests in the same period (carbon losses due to harvest and fires are subtracted from the total). At COP/MOP2, under decision -/CMP.2 (FCCC/SBSTA/2006/L.6/Add.1), carbon sequestration potential from forest management are capped for Italy to 2.78 Mt C (10.2 Mt CO₂) per year times five³. Carbon sequestration potential due to Afforestation/Reforestation activities (A/R) relates to the accounting of plantations existing before 01/01/90 as well as the establishment of new plantations. In particular with reference to new plantations, the national strategy to meet the Kyoto Protocol objective foresees the elaboration of a National Plan for afforestation and reforestation activities including the resources needed for its implementation. At the moment, such Plan is under examination by the Joint Committee of State and Regions. The 2007 Financial Law allocated a first sum for such activities (about 10 MEuro for year 2007, 50 MEuro/yr for 2008-2009) and in the next months the Ministry of Agriculture, Food and Forestry Policies is expected to approve the implementation decree.

Policies and Measures in Non-ETS Sectors

The additional policies and measures identified in the draft national strategy affect all economic sectors and all greenhouse gases. Most of these policies and measures are projected to achieve relevant greenhouse gas emission reductions, but also address other objectives of economic, energy or environmental policy. This particularly applies to the promotion of Combined Heat and Power (CHP) and renewable energy (energy sector – supply), measures aimed at improving energy saving and energy efficiency (energy sector – industry, tertiary and residential), measures aimed at improving vehicle efficiency and use of biofuels (energy sector – transport sector).

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

Table 2 – Contribution of Forestry Activities

| | [MtCO ₂ eq/yr] |
|--|---------------------------|
| Art 3.4 Forest Management | 10.2 |
| Art 3.3: "Natural" Reforestation | 3.0 |
| Art 3.3: A/R (old plantations: 1990-2002) | 1.0 |
| Art 3.3 A/R (new plantations: 2002-2012) <i>included those in areas under hydrogeological risk (Law 183/89)</i> | 2.0 |
| Total | 16.2 |

Table 3 – Additional Policies and Measures

| | Expected average annual reduction (MtCO ₂ /yr) | |
|--|---|----------------|
| | In non ETS Sectors | In ETS Sectors |
| 1) Elimination of vehicles built before 1996 with emission over 145 gCO ₂ /km | 9 | |
| 2) Measures for new infrastructures in public transport | 4.5 | |
| 3) Use of biofuels | 6 | |
| 4) Reduction of N ₂ O emissions from existing HNO ₃ plants | 1.4 | |
| 5) Reduction in the use of nitrogen fertilizers | 0.2 | |
| 6) Collection and use of biogas from animal waste | 0.1 | |
| 7) Enforcement of EU Directive 2002/91/EC (Buildings Directive) | 5 | |
| 8) Extensions of the decrees imposing energy efficiency standards | 6.5 | |
| Subtotal expected average annual reduction | 32.7 | |
| 9) Small and medium CHP (cogeneration) plants | 4 | 4 |
| 10) Increase of power production from renewable sources | 2.75 | 2.75 |
| 11) Promoting waste-to-energy schemes in industrial installations | 0.9 | 2.1 |
| 12) Substitution of old engines with new engines with higher efficiency | 1.8 | 1.8 |
| Subtotal expected average annual reduction | 9.45 | 10.65 |
| TOTAL | 42.15 | 10.65 |

Table 3 summarizes policies and measures and the related expected annual reductions over the 2008-2012 period.

Some of the above mentioned Policies and Measures generate emission reductions also in economic sectors included in the scope of the “Emission Trading” Directive (right column). As these sources are included in the trading scheme, the potential reductions achieved (below the allocated allowances) turn into a benefit for the private sector, because the operators will sell excess allowances on the market. Therefore, only the emission reductions achieved in the non-trading activities (left column) can be accounted for covering the national gap to Kyoto.

Reduction in Emission Trading Sectors

The Directive 2003/87/EC has established a mandatory “cap and trade” scheme for emission allowance trading of energy installations and energy intensive industrial sectors. Allowances are allocated ex-ante to operators of installations included in the scheme. Operators are requested to monitor and communicate to the National Competent Authority the emissions for the calendar year and have to surrender an equal number of allowances. Operators can sell or buy on the market excess/deficit allowances. This mechanism incentives operators to reduce emissions and sell allowances when the marginal cost of abatement is lower than the allowance market price and to buy allowances on the market when the price of allowances is lower than the internal cost of abatement. The trading scheme should thus achieve the overall emission reduction at the lowest cost.

Allowances are allocated to operators for each year's commitment periods (1st period 2005-2007, 2nd period 2008-2012, then five-year periods) with the National Allocation Plan (NAP), proposed by EU Member States National Competent Authorities and approved by the European Commission. The total amount of allocated allowances (cap) has to be in line with the national strategy to reach the Kyoto target. The Directive's Annex III and the additional provisions by the European Commission specify the guidelines and assessment criteria for the NAPs, in particular the stringency of the cap and its compatibility with the national strategy to reach the Kyoto target.

The Italian NAP for the 2008-2012 period has been notified to the Commission and is undergoing the assessment process by the Commission. The cap has been set at 209 MtCO₂/yr, 14.1 MtCO₂/yr less than in the 1st period cap and 24.25 MtCO₂/yr less than the projected emissions in the reference scenario. The trading sectors have been requested a reduction effort thus compatible to close the “gap” to Kyoto given the reductions achieved in other sectors as shown in Table 1.

¹ Notice that only forest management has been elected as an activity under article 3.4 of the Kyoto Protocol.

² As all Italian forests are submitted to general silvicultural prescription (“Prescrizioni di massima e di polizia forestale”, prescriptions adopted at Provincial level according to the RDL 30 December 1923, n. 3267 and R.D.L. 16 May 1926, n. 1126), all Italian forest area has to be considered managed forest land.

³ http://unfccc.int/meetings/cop_12/items/3754.php; Italian National Inventory Report and Common Reporting Format Table also available at: http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/3734.php

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

Greenhouse Gas Emissions in China

Li Hongqi and Zhou Binbin, College of Environmental and Energy Engineering, Beijing University of Technology

Along with the rapid development of world economy and the social advancement, harmful substances emissions to air and fossil energy consumptions increase with each passing day, bringing about increasingly severe environmental problems. According to the conclusions of the IPCC, in over 100 years from the late 19th century to the present, global air temperature near ground has increased averagely by 0.3 ~ 0.6 °C and global sea level risen by 0.1 ~ 0.2m on average. If no control measures were taken, carbon dioxide (CO₂) concentration in global atmosphere would double its present level by the mid-21st century, as calculated based on the existing rate of CO₂ emission. By then, global mean air temperature would increase by 1.9 °C ~ 4.6 °C and cause the sea level to rise by 18-58 cm. If this trend last one thousand years, the consequence would be thorough melting of ice caps in the Greenland and the South Pole, and the sea level would increase by 7 m accordingly. This would bring severe disasters to human kind and endanger natural ecosystems, consequently leading to a large-scale environmental catastrophe.

Present Greenhouse Gas (GHG) Emissions in China

As the largest developing country in the world, China has seen fast development in economy since its reform and opening to the outside world, and its GHG emissions have also increased, next only to the U.S, ranking 2nd. From 1990 to 2001, CO₂ emissions in China increased by 823 Mt on a net basis, accounting for 27% of the world's total for the same period; it's estimated that by 2020, CO₂ emissions will increase by 1.32 times from 2000 levels, an increase greater than the world's total emission increments from 1990 to 2001. According to forecast, China is likely to arrive at the world's average level of CO₂ emissions around 2025, with total CO₂ emissions likely exceeding the U.S. and

ranking 1st in the world. However, the present energy consumption per capita of China is simply 1/8-1/10 of that of developed countries, which is still at a relatively low level. Due to outdated equipment and backward technologies, its energy intensity is high and GHG emissions per unit GDP are high.

Total emissions and source proportion

In 1994, for example, taking calculation criteria as stated in the Kyoto Protocol ("the Protocol"), total GHG emissions in China were 3650 × 10⁶ tons of CO₂ equivalent, with CO₂, methane (CH₄) and nitrous oxide (N₂O) emissions accounting for 73.1%, 19.7% and 7.2%, respectively. According to the People's Republic of China Initial National Communications on Climate Change, in 1994, net CO₂ emissions in China were approximately 2666 × 10⁶t, in which emissions from energy sector as the main source of CO₂ emissions in the country were 2795 × 10⁶t, accounting for 90.95% of total CO₂ emissions; emissions from industrial processes were approximately 278 × 10⁶t; and carbon sinks of land-use changes and forestry were about 407 × 10⁶t. CO₂ emissions from energy activities are completely a result of combustion of fossil fuels, with a 43.75% share of total emissions from industrial sector and 34.40% from the energy production, processing and conversion sector; main sources for CO₂ emissions from industrial processes were production processes of cement and lime—with a 90.42% joint share of total emissions from industrial processes.



editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

CH₄ emissions mainly come from agricultural activities, energy activities and disposal of waste. In 1994, CH₄ emissions were approximately 3429 × 10⁴ t, in which emissions from agricultural activities and energy activities were approximately 1720 × 10⁴ t and 937 × 10⁴ t, accounting for 50.15% and 27.33%, respectively. Agricultural activities were the largest emission source of CH₄, including fermentation of intestines of ruminant (29.70%) and rice planting (19.73%); energy activities were the second largest emission source of CH₄, including coal mining and post-mining activities (20.71%) and emissions from biomass combustion (6.26%). CH₄ emissions from waste disposal were approximately 772 × 10⁴ t, accounting for 22.52%. N₂O emissions were approximately 1.5 × 10⁴ t, including 78.6 × 10⁴t from agricultural activities, accounting for 92.4%; 5.0 × 10⁴ t and 1.5 × 10⁴ t from energy activities and industrial processes, accounting for 5.8% and 1.8%, respectively. N₂O emissions from agricultural activities included direct emissions from farm fields (60.3%); indirect emissions from farm fields (19.5%); emissions from grazing (14.0%); emissions from animal excrement management systems (5.6%), excluding those from grazing and excrement combustion; emissions from direct straw burning in farm fields and excrement combustion (0.5% and 0.1%, respectively).

CO₂ emissions per capita

Though total CO₂ emissions in China are considerable, the level of emissions per capita is still very low. According to estimates by the International Energy Agency (IEA), CO₂ emissions per capita of China was 0.65t carbon equivalent/person in 2000, only equivalent to 61% of the world's average level 1.06t carbon equivalent; as the living standard of people improves and the demand for basic energy sources increases, emissions per capital will inevitably continue to increase. China's CO₂ emissions per capita have an upward trend as a whole.

Carbon emission intensity per unit GDP

Carbon emission intensity per unit GDP is an important indicator reflecting the economic structure, energy structure and energy efficiency of a country. In 2000, CO₂ emission intensity per unit GDP in China was approximately 0.8t carbon equivalent/1000 dollars, which was 4 times the world's average level (based on prices in 1995). From 1990 to 2000, China's CO₂

emission intensity per unit GDP decreased by 49.4%, while the world's average level decreased by only 11.5% and that of OECD countries by 10.9% over the same period. In addition to low added value of products and low energy efficiency, there are many factors which contribute to the high level of China's carbon emission intensity per unit GDP, such as industrial structure, exchange rate, energy composition, etc.

CO₂ point sources and their distribution characteristics

Thermal power plants were the first CO₂ emission source, with emissions of approximately 1,863.0919 Mt (accounting for nearly 63% of total emissions for 2004), which were followed by cement plants and iron & steel enterprises with emissions of 570.3600Mt and 282.8552 Mt, respectively. Emissions from the three groups of enterprises accounted for more than 91% in total (See Figure "Composition of CO₂ Emissions in China 2004" on the right). The overall distribution of the emission sources was consistent with the distribution of energy and economic activities, characterized by gradual decrease in the number of sources from the eastern to western part of the country. Tibet, south Sichuan, north Inner Mongolia, south Xinjiang, etc. were "clear areas" in distribution of CO₂ point sources. East China and South China had the densest distribution of point sources. Thermal power plants were distributed mainly in Central China and eastern coastal areas, and cement plants scattered mainly in Central China, South China, North China and Northeast China with relatively even densities. Refineries were distributed mainly over oil producing regions in South China, eastern coast areas and the central part of the country, and iron & steel enterprises scattered mainly in major ore production regions.

Effect of GHG Emission Reductions in China

China is a developing country, but its level of GHG emissions per capita is far lower than that of developed countries. Nevertheless, the Chinese government has long taken the protection of human living environment as its own task and attached great importance to the control over GHG emissions; identified environmental protection as one of its basic national policies and sustainable development as a major strategy; considered in a systematic way the issues on socioeconomic development and GHG emission reduction; adjusted its economic structure, promoted



editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

technological advancement and improved energy efficiencies; and taken various effective measures to take part in activities for global climate protection, including industrial and energy structures adjustment, afforestation, population control, and formulation of a series of laws and regulations. It has made tremendous efforts and in return achieved a significant effect.

China's energy consumption per 10,000 yuan of GDP was 2.68 t coal equivalent in 1990, which increased to 1.43 t in 2005. The accumulated energy savings during the period was up to 0.8 billion tons of coal equivalent, equivalent to a reduction in CO₂ emissions by 1,800 Mt. Over the past 20 odd years, China energetically carried out such ecological construction and protection measures as afforestation, natural forests protection, returning the grain plots to forestry and grassland, grassland construction and nature reserves construction, and its accumulated net carbon sink through afforestation was approximately 3.06 billion tons of carbon dioxide.

By actively regulating its energy consumption structure, the Chinese government made the proportion of coal consumption down from 76.2% in 1990 to 68.7% in 2005 on the one hand; on the other hand, it made the proportion of quality clean energy consumption up from 18.7% to 24% in oil and gas and 5.1% to 7.3% in hydropower and nuclear power from 1990 to 2005. Moreover, the Government made great efforts in energy saving and released a series of laws, regulations and standards, and took various measures to let down energy consumption per unit GDP; the present energy consumption per 10,000 yuan of GDP has decreased by 64% compared to 1980, on a fixed prices basis.

According to statistics in 2004, the total quantity of renewable energies utilized in China has already reached 0.4 billion tons of coal equivalent, accounting for 20% in the country's energy structure, to which the traditional biomass utilization contributed 250 million tons of coal equivalent, up to 100 million kWh installed capacity of hydropower stations contributed 125 Mt of coal equivalent, and the utilization of solar energy, wind energy and biomass energy produced with modern technology contributed 25 million tons of coal equivalent.

The country's grid-connected wind power generation also gained fast development during the "10th Five-Year Plan" period. By the end of 2004, the installed wind capacity countrywide was 764,000 kWh, ranking 10th in the world, in which the installed capacity of wind

turbines put into operation in 2004 was 197,000 kWh, with a growth rate up to 34%.

The country's photovoltaic installed capacity reached over 70,000kWh in 2005, over 50% of which is for power supply to backcountry regions, with an annual growth rate more than 20%.

By the end of 2005, the nationwide use of solar collectors exceeded 70 million square meters, approximately accounting for 50% of the world's total, with an annual growth rate up to 27% in the past ten years. The goal is by 2010, the total solar collector area nationwide reaches 150 million square meters, and together with other solar uses, the annual use of alternative energy resources reaches 30 million tons of coal equivalent.

On biomass utilization, there have been more than 12 million small household biomass pools and over 1,500 medium & large biomass works across the country, with annual biogas generation of more than 5 million cubic meters.

Positive Response to the Kyoto Protocol

Though there are no specific emission reduction targets provided for China and other developing countries on the principle of "common but differentiated responsibilities" as stated in the Protocol, the Chinese government actively promoted the protocol's conclusion and entry into force, and based on its national conditions, adopted related measures to respond actively to challenges and opportunities arising from the protocol.

China will, on the principle of "common but differentiated responsibilities", implement its obligations under the Protocol, stick to the scientific concept of overall, harmonious and sustainable development, continue to make efforts to improve energy efficiency and develop and utilize new and renewable energy resources, and launch energetically afforestation campaigns, so as to a due share of contributions to mitigation and adaptation of climate change. Its efforts in this regard include the following:

1) Setup of a national coordination body on climate change. The Chinese government set up a national coordination body on climate change in 1990 and renamed it the National Coordination Committee on Climate Change.

2) Active participation in international negotiations on climate change. The Chinese government began to dispatch a delegation to take part in negotiations on



editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

the United Nations Framework Convention on Climate Change (“the Convention”) from 1990, and signed the Convention in 1992. The Chinese government signed the Protocol in 1998 and ratified it in 2002.

3) Introduction of a series of policies and measures favorable for abatement of GHG emissions, including developing and implementing the sustainable development strategies, and identifying the addressing of climate change as an important part of the sustainable development strategy and making efforts to improve energy efficiency; actively developing high-quality energy sources; making efforts to improve energy structure; promoting the utilization of new and renewable energy sources; supporting the development and utilization of such new and renewable energy sources as biomass, solar energy, wind energy and geothermal energy in rural areas and backcountry regions; and carrying out large-scale afforestation.

4) Earnest implementation of its specific obligations under the Convention. The Chinese government developed the National Strategy for Dealing with Climate Change.

5) Carrying out information and educational activities on climate change to enhance public awareness on climate change.

6) Carrying out scientific research relating to climate change.

7) Making preparations for implementation of the Protocol. The Chinese government set up the National CDM Board, and released the Measures for Operation and Management of Clean Development Mechanism Projects in China specifying procedures for declaration and approval of CDM projects. At present, a number of projects have been officially approved and many projects are now in preparation.

In addition, on 5 September 2005, China and the EU issued the Joint Declaration on Climate Change between China and the European Union, which defined the partnership on climate change in the field of climate change so as to strengthen practical co-operation on the development, deployment and transfer of low carbon technology, to enhance energy efficiency and promote the low carbon economy. On December 11th 2006, the U.S., Australia, Japan, China, India and South Korea officially kicked off the Asia-Pacific Partnership on Clean Development and Climate in Australia. China has also carried out bilateral cooperation in climate change with some countries.

China's 11th Five-Year Plan

As an active response to the Protocol, China has also clearly proposed in its 11th Five-Year Plan the objectives of achieving a significant effect in the GHG emissions control and of decreasing energy consumption per unit GDP by 20%.

Pursuant to the 11th Five-Year Plan, the Chinese government has developed the fundamental principles of building a stable, economical, clean and safe energy supply system by giving priority to energy saving, basing ourselves on domestic development, taking coal as fundamental, focusing on diversified development and optimizing production and consumption structures. It has also researched and developed in succession the medium & long-term plans on energy development, as well as the plans specifically for coal, oil & gas, power, new energy sources and energy saving under which plans on nuclear power, wind power, liquefied natural gas (LNG), coalbed gas, alternative energy sources, etc. have also been formulated.

These plans are characterized prominently by striving to develop cyclic economy and increasing energy efficiency; optimizing the energy structure and improving the proportion of clean energy sources; and actively encouraging power generation with clean coal, nuclear, natural gas and new energy sources, to reduce GHG emissions and ultimately fulfil the obligations and responsibilities of China under the Protocol.

During the 11th Five-year Plan period, primary measures for the country's energy development include the following aspects:

1) Giving priority to energy saving and taking efficiency as the foundation. Strive to decrease energy consumption and improve energy efficiency by means of structural adjustment, technological advancement, management enhancement, reform deepening, strengthening of rule by law and public participation, on the principle of giving priority to energy saving.

2) Basing ourselves on domestic development and focusing on diversified development. Maintain self-energy sufficiency at a reasonable level through such measures as developing coal in an orderly way, developing power actively, accelerating oil & gas development and energetically developing new and renewable energy sources.

3) Ensuring security and protecting environment. Address the issues of frequent occurrence of major accidents in and environmental pollution arising from coal production, by means of coalmine gas

⏪ × ≈ i < > 4/7

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

control and coalmines rectification and closedown, and of increasing investment in safety of coalmines, developing specific standards relating to gas contents in coal exploitation, strengthening safety education and enhancing monitoring and management.

4) Carrying out foreign cooperation on the principle of mutual benefit. Plan as a whole the domestic development and opening to the outside world; actively take part in the development and cooperation in such resources in the world as oil and gas; enhance the abilities to get a grip of international market changes, to avoid market risks and to increase supply of overseas oil and gas resources; and build a diversified, stable and reliable security system on energy supply.

5) Other measures, including giving an impetus to standardization of and regime of law for energy development, utilization and management, protecting and rehabilitating natural ecosystems, intensifying environmental protection, etc.

Potential for GHG Emission Reductions in China

Emission reduction potential in energy structure adjustment

Energy activities are a major source of CO₂ emissions in China, accounting for 90.95% of total CO₂ emissions. In China, the proportion of coal consumption to total energy consumption is higher than that of developed countries and the world's average level, while proportions of oil and gas are relatively low; particularly, the proportion of gas consumption is far lower than the world's average level. Coal is a kind of fuel with high CO₂ emissions, whose combustion contributes most to GHG. CO₂ emissions from combustion of coal, oil and gas per ton are 0.7 t, 0.54 t and 0.39 t, respectively. CO₂ emissions from coal combustion per unit of heat energy are 36% and 61% higher than emissions from oil and gas, respectively, while hydropower and nuclear power have basically no CO₂ emissions. Thus, to adjust the energy structure appropriately can effectively decrease CO₂ emissions.

From changes in China's energy structure over the past 20 odd years, it's possible to decrease the proportion of coal consumption from the present 65% ~ 67% to about 60%, though it's difficult to change the energy consumption structure giving first place to coal in a short term. If gas were substituted for coal, CO₂ emissions would be reduced by 3.4% ~ 5.2%.

Emission reduction potential in improving energy efficiency

At present, compared to developed countries, there are great gaps in China's energy exploitation, supply and conversion, transmission and distribution technologies, industrial production technologies and other technologies for end uses of energy: nearly 30% lower in energy exploitation efficiency, about 5% in intermediate sectors, about 10% in end-use efficiency, and 10% ~ 20% in overall efficiency of energy system. Therefore, there is a great potential in improving energy efficiency. From 1981 to 1999, China's energy consumption per 10,000 yuan of GDP decreased by 60%, with a yearly average energy saving rate of nearly 5%. Energy efficiency has increased from 25% in 1980 to about 34% in the early 21st century. The accumulated energy savings nationwide from 1981 to 1999 were 9.49×10^8 tons of coal equivalent, equivalent to approximately 5.5×10^8 t CE emission reductions.

Emission reduction potential in renewable energy utilization

China has abundant renewable energy resources. The theoretical reserve of hydropower resources are 7×10^8 kW, the technically exploitable capacity is 5.42×10^8 kW, and the economically exploitable capacity is 4.02×10^8 kW; in 2004, the installed hydropower capacity broke through 1×10^8 kW. China has rich tidal energy reserves, and exploitable tidal energy sources are up to 2100×10^4 kW in its southeast coastal areas, with annual power generation of 620×10^8 kWh; however, the tidal energy sources that have been developed and utilized up to now are less than 1% of the total. Wind energy resources in China are 10×10^8 kW, including 2.5×10^8 kW inland and 7.5×10^8 kW offshore. Particularly, the areas north to the line of the Tianshan Mountains-Yinshan Mountains-Great Xingan Mountains have very abundant wind energy resources, with wind energy power density generally above 200 ~ 300W /m² and somewhere even up to 500W/m². However, less than 1% of the total wind energy resources have been developed and utilized up to now. Power generation with renewable energies (such as biomass, biogas and wind power) has a significant effect of emission reductions; though unparallel to thermal power generation, it has a considerable development prospect in view of renewable energy reserves. In addition, solar furnaces, solar collectors, geothermic warming, waste power generation and biogas generation have been playing a

« × ≈ i < > 5/7

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

great role in many regions.

It is estimated that by 2020, within the composition of primary energy sources, the proportion of renewable energies can be up to about 14%, oil and gas up to about 27%, and coal down below 60%. And compared to 2000, the carbon emission intensity of non-fossil energy sources including nuclear energy will decrease by 13%, with a prominent effect of mitigation of carbon emissions.

Carbon sink potential in terrestrial ecosystems

It is initially estimated that, at present, the existing carbon stock in forest vegetation and soil is only 44.3% and 90% of their potential stock, respectively, presenting a considerable carbon sink potential. Thanks to the large-scale afforestation in nearly 20 years, the forest coverage of China had increased from 12% in the early 1980s to 16.6% in the late 1990s. The recent three years of observations and researches reveals that the country's typical forest ecosystems and grassland ecosystems have a relatively strong carbon sink function. At present, the annual amount of carbon sequestered by forests across the country is $0.60 \times 10^8 \sim 1.26 \times 10^8$ t; the annual amount of carbon absorbed by grasslands (including artificial grass growing and grasslands improvement) and through control activities on soil erosion is 0.12×10^8 t and 0.03×10^8 t, respectively; and the annual amount of carbon sequestered by farm crops is $5.2 \times 10^8 \sim 6.5 \times 10^8$ t. Analysis shows that, the stock of organic carbon in surface soils of farmland over the recent 20 years is $5.2 \times 10^8 \sim 6.5 \times 10^8$ t as a whole, with an annual increase by $15.6 \times 10^6 \sim 20.1 \times 10^6$ t. Along with the implementation of return of the grain plots to forestry and the improvement in agricultural soil management, there is a great potential in carbon sink by the country's farming and forestry activities. Additionally, the alpine wetlands in the Qinghai-Tibet Plateau, wetlands in Northeast China and those scattered in the major river basins are gigantic carbon pools, and inclusion of them in the framework on carbon management of terrestrial ecosystems will be of great strategic significance.

Potential for CH₄ emission reductions

Agriculture and livestock farming are major sources for CH₄ emissions. At present, ruminant breeding in China relies mainly on coarse fodder, featured by extensive management. Through straw fodder treatment and nutrient improvement, CH₄ emissions from individual

ruminants can be reduced effectively. For example, the use of multifunctional composite additive blocks can improve the average daily gain by 10% ~ 30% and reduce CH₄ emissions of unit livestock product by 10% ~ 40%. Furthermore, to breed high-yield, quality varieties, to decrease the incidence of animal diseases and to apply intensive high-yield breeding technology and environmental engineering technology appropriate for moderate livestock breeding will also improve the level of animal yields of per unit area and reduce total CH₄ emissions. Because CH₄ emissions from rice fields may have a 1.5 ~ 3.5 times difference due to different varieties of rice, to plant and select new varieties is an important way of reducing CH₄ emissions from rice fields. China has world leading rice techniques, which will play an active role in CH₄ emission reductions. Coal mining and post-mining activities are another major source for CH₄ emissions. The main component of coalbed gas is CH₄, which is a kind of efficient, clean gas fuel with a calorific value at normal temperature equivalent to that of natural gas. To produce coalbed gas prior to coal mining for recycling and reuse will not only increase new energy sources, but reduce the occurrence of CH₄ emissions and gas explosion accidents. It's estimated that the reserve of onshore coalbed gas within a depth of 2000m is approximately 35×10^{12} m³, presenting a huge potential for future recycling and reuse of coalbed gas.

Potential for N₂O emission reductions

Agricultural activities are primary N₂O emission sources. The use of nitrogen fertilizer in China has increased obviously along with the country's socioeconomical development. According to rough estimates, the country's total consumption of nitrogen fertilizer can basically satisfy the needs of agricultural production, but the fertilizer is overused in about 1/3 areas (mainly in economically developed regions) and underused in another 1/3 (mainly in economically underdeveloped regions). If the amount of fertilizer overused in the economically developed regions is applied to the underdeveloped regions, N₂O emissions may be reduced greatly. At present, the country's utilization rate of nitrogen fertilizer ranges from 20% to 50%; if it were increased from 20% ~ 30% to 30% ~ 40%, N₂O emissions would be decreased by 10% accordingly. In addition, the use of slow-release nitrogen fertilizer, controlled release fertilizer and biological inhibitor, etc. may also reduce N₂O emissions remarkably. China is

⏪ × ≈ i < > 6/7

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

a major agricultural country, so its implementation of emission reduction measures will play an active role in GHG emission reductions.

China's power sector, such trades within the industrial sector as iron & steel, chemical engineering and building material, construction sector and transportation sector are major sectors for its future mitigation of carbon emissions. The technical potential of these sectors in mitigation of carbon emissions approximately accounts for 70% of the country's total potential. Compared to 2000, CO₂ emission reduction potential in coal-fired power generation by 2020 may reach 150 million tons of carbon, and by 2030, CO₂ emission reduction potential in such major energy consumption trades within the country's industrial sector as iron & steel, chemical engineering and building material, transportation engineering and building material, transportation sector and construction sector may reach 240 ~ 260 Mt, 40 Mt and 100 Mt carbon, respectively.

Summarily, opportunities are of short duration, while risks long exist. Our choice now can only be thinking ahead and taking a path of development allowing for low carbon emissions through industrial and energy structures adjustment. What's most important is to make the environmental protection and energy saving a issue with which the Chinese government, its enterprises and citizens are highly concerned, give an impetus to improving environmental and energy saving monitoring systems, discover new business opportunities from perspectives of environmental protection and energy saving, and encourage citizens to participate in ecological politics, ultimately making China a state where "people and the nature coexist harmoniously".



⏪ × ≈ i < 7/7

editorial

news and events

on focus

The European Union and Multilateral Environmental Agreements

Italian Strategy to Fulfil the Kyoto Protocol Commitment

Greenhouse Gas Emissions in China

VIU training program

around us

what's next

VIU training program echo from participants

This section is written by the Chinese participants in the trainings in Italy. We hope hereby to provide the Newsletter readers with an authentic flavour of the training experience.

Beijing Environmental Protection Bureau

Vehicle Emission Control

Italy, December 9-22 2006

Italy, January 13-27 2007

37 participants

Most of the cities all over the world are encountering the same problems related to ever-increasing motor vehicles within the city transport system. In Beijing, the problems of traffic jams and environment issues are increasingly attracting people's attention. In order to welcome the 2008 Olympics, the improvement of air quality and transport is one of the focal points of Beijing Government's work. Therefore the Beijing Municipal Environment Protection Bureau asked VIU to organize two trainings on Vehicle Emission Control. In the first course held in December 2006, Shao Hongsheng, Deputy General Manager of Beijing Public Transport Holdings Ltd., headed 17 senior executives from professional departments and branch bus operating company to attend the training organised by Venice International University in collaboration with the Beijing Municipal Environment Protection Bureau. It consisted of lectures and field surveys with two focuses on environmental protection and sustainable transport.

In particular, Urban Transport Control, Urban Transport Planning and Environment Effect, History of Venice and Environment Changes of the Lagoon, Environmental Issues of Venice, Milan Sustainable Transport Development, Public Transport Service Planning, Public Transport Control System, Urban Transport Control Rules in Venice, Public Transport Control System, Economic Analysis on Transport Pollution, and Automobile Emission Control were covered. In addition, we visited Rome, Bologna and Turin Transport Control Centre, Thetis headquarters and IVECO Company.

As most of the participants of this training course were senior executives, they paid special attention to the differences and advantages of the Italian public transport policy, operating management system, operating organization mode in comparison with Beijing's public transport, and they focused especially on how management system, operation mechanism and management rules match in the application of public transport operating control system.

The training program has broadened the participants' outlook and knowledge base. In particular, the trainees learned basic conditions of urban transport and public transport management in Italy. The emphasis on environmental protection in transportation and the scientific attitude on emission control have left them a deep impression.

During the wrapping up session, the participants expressed their wish for more time for discussion and exchange of experiences as well as more field teaching and discussion.



⏪ × ≡ i > 1/3

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next

In the second course held in January 2007, participants came from different environmental protection authorities of Beijing Municipality. In order to meet their needs, the courses were structured differently: the main policies and strategies at local, national and European levels were introduced. The well tailored thematic courses were given on sustainable transport, intelligent transport system, and the diesel retrofit program. Moreover, the Milan and Rome case studies were deeply discussed both during the lectures and site visits.

Through the training activities, the trainees have learned the advanced concepts and measures for vehicle emission control. The diesel retrofit program is a great and challenging topic for us, as we know that the particulate matter is the key point to improve air quality in Beijing, and diesel vehicle emission is the main source of PM.

During the training activities, thanks to discussions with experts and professors, the trainees have learned the experience both on policies and measurements. We all agree on the fact that the training program is really helpful to us.

It is important to underline that after the training program, some of the trainees hope to continue to communicate with the Italian experts, and discuss in the details some specific issues. The upcoming portal platform can help them to get in touch more easily. The need to further widen these themes must be seen in the framework of the public transport reform that Beijing is currently experiencing. The nature of social public welfare and sustainable development concept has brought tremendous opportunities for rapid development of Beijing public transport.

Within the Sino-Italian Cooperation Program, we hope to have special training on public transport legislation, policy and management, especially in combination with training contents, to organize Beijing's public transport administrative and technical staff spending time in Italian public transport companies to systematically and deeply understand their public transport management experiences. The on-job training will be of great help to the trainees to apply learned knowledge to their work.



⏪ × ≍ i < > 2/3

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next

State Environmental Protection Administration

Multilateral Environmental Agreements

Italy, January 27-February 10 2007

24 participants

The training program on Multilateral Environmental Agreements jointly sponsored by SEPA and IMELS was successfully held from January 27 to February 10, 2007 in Italy. It has won great compliments from the trainees for its rich training content, well-structured courses and precise organizational work.

The course wonderfully combined in-class training in which experienced experts and officials made highly informative presentations on various relevant topics with the site visits where the trainees received first hand impressions and experience. After the training, the participants were given a comprehensive idea of the Italian and EU policy framework, management experience and technological practices for the implementation of multilateral environmental agreements. The knowledge and experience acquired in this training program were quite useful, as many of the issues mentioned in the training are also very typical in China. What they have learnt will be of great reference to their future work in the implementation of MEAs in China.

All trainees expressed their hope for further participation in such a training program and permanent information sharing through the internet would be highly appreciated.

For future courses, the trainees have some suggestions: 1) even though the training has some specific topics, additional introduction on the overall environmental policy framework and law enforcement in Italy and EU could be useful; 2) the coordination between different government departments would be interesting; 3) as the majority of the trainees are from local environmental protection bureaus, they are very interested in how environmental agencies at regional levels deal with these issues, and a visit to these agencies would be very interesting.

All trainees agree that the training course is a great success, and would like to thank IMELS for the opportunity. In addition, the professional organization work and hospitable reception of VIU also left great impression on the trainees.



⏪ × ⏩ i ⏪ 3/3

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next

VIU training program activities report

Multilateral Environmental Agreements, SEPA

Italy, January 27-February 10 2007

24 participants

The first of the four training programs planned for the year 2007 in collaboration with SEPA focused on a new topic dealing specifically with legal aspects of environmental management.

The aim of the course was to present some of the most important Multilateral Environmental Agreements (MEAs), to explain how Italy, the EU and other Nations are translating the Agreements' provisions into national legislation and how their implementation is carried out.

During the site visit at the Ministry for the Environment, Land and Sea in Rome, the Italian approaches used to implement the Kyoto and the Montreal Protocols were discussed. The development of MEAs and the trends they are following were introduced in different classes in Venice, in order to provide the participants with the general framework for the implementation of international conventions and the instruments used for their enforcement: those introductory sessions were supported by the presentation of case studies from the Rotterdam Convention and the Basel Convention, two important multilateral agreements which faces the problem of international trade on hazardous chemicals and waste. Also the Montreal Protocol and the Stockholm Convention were taken into consideration as they face the problems of pollutants, in particular the phase out and removal of ozone depleting substances and persistent organic pollutants. The EU approaches used by the Commission in order to put into law the international agreements, the instruments adopted for their implementation and the sanctions for Member States raised a lot of interest among the participants.

However, as MEAs do not only concern agreements at global level, the importance of regional agreements was explained with the case study of the Carpathian Convention, which shows how nations sharing common environmental resources can work together for their protection.

The two site visits showed how industries follow the requirements of the legislation on environmental matters, besides their voluntary efforts.

Given the complex issue of this training, and the different legislative and political international forces involved, the lecturers were selected among different national and international organisations (UNEP, UNITAR etc.). In particular, we were very honoured to have Mr. Ludwig Krämer, former European Commissioner, to take part in the training and to continue his cooperation by writing in the On Focus of this Newsletter issue.

◀ × ≡ i ▶ 1/4

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next



March 2007 Training Activities in China:

Distance Learning Project (Beijing, Changsha and Xining)
Sustainable Urban Development in Coastal Cities (Tianjin)
Environmental-Friendly Cities (Shanghai)

The increasing number of applications to attend the Training Courses, far higher than the current availability in the Advanced Training Program, was the main reason for VIU, CASS, Monserrate Onlus and IMELS to decide to jointly implement a one-week pilot project of "Distance learning Training Course on *Eco-management Strategies and Policies*", in order to explore new means of training provision to widen the number of participants. The Distance Learning training revealed itself as an efficient tool for reaching such an ambitious target, as it allowed to simultaneously train a large number of people dislocated in different and peripheral sites. As a matter of fact, the Distance Learning training course consisted of a multi-spot simultaneous course, whose lectures were performed in Italy and broadcasted live to 3 different locations in China (Beijing, Changsha - Hunan Province, and Xining - Qinghai Province) where a group of 20 trainees were placed in each location, for a total of 60 participants involved in the project. Afternoon sessions, Chinese time, were devoted to Italian lecturing sessions broadcasted live from Milan (also in consideration of different time zones), whereas morning sessions hosted Chinese lecturers in Beijing, broadcasted live in Changsha and Xining, who compared and applied the European situation, explained by the Italian lecturers, to the Chinese situation. Two mornings were dedicated to self-study and the outcomes of each class individual research was shared with the other classes by using the same broadcasting techniques. As in the usual Training Program, VIU took care of selecting the topics and lectures that formed the academic program, whereas CASS selected the trainees in all 3 classrooms, thanks to the support of the Changsha and Xining partners. Monserrate onlus, an international association with a long worldwide experience in distant learning, based in Milan and Beijing, was the technical partner for the implementation of the Training Course and supported both the technological aspect and the knowledge necessary to face this kind of teaching activity. The pilot project was very succesful and a good starting point for further developing the training experience.

The Science & Technology Committee of Tianjin Municipality asked VIU to organize a Training Course after a representative of the Tianjin Municipality took part in MOST Training in 2006. The Tianjin Municipality's representative was positively impressed by the usefulness and high value that such Program could bring to a city like Tianjin, which is undergoing a fast and heavy urban development. It is on this basis that the Science & Technology Committee warmly welcomed VIU delegation in Tianjin last March and hosted a training devoted to *Sustainable Urban Development in Coastal Cities* at Nankai University. The similarities between Venice and Tianjin, two coastal cities with port facilities and facing problems of industrial re-development, allowed a highly interesting debate among Italian and Chinese lecturers and the 50 trainees that participated in the course.

Shanghai Urban Planning Museum at People's Square in Shanghai was the beautiful and most appropriate location selected by the Shanghai Environmental Protection Bureau for hosting the intense three-day Training Program on *Environmental-Friendly City* (March 15-17, 2007). The focus of the training stemmed from a project on sustainable urban development that SEPB is developing in cooperation with UNDP, which was also presented in those days. VIU delegation's lectures explored in particular issues of public utilities



« × ≈ i < > 2/4

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next

and services, and public and private partnerships, public environmental awareness and participation, social responsibility. These are among the major topics in China as it was demonstrated by the recent approval of a new law on private property by the National People's Congress.

New and Renewable Energy, MOST

Italy, March 3-17 2007

32 participants

Energy Efficiency and Renewable Energy, BMEPB

Italy, March 24-April 7 2007

21 participants

In a world increasingly dependent on energy, every country is experiencing the continuous search for new energy sources and the effort of using the traditional ones in a more efficient way.

The energy issue is considered particularly important in a country like China, where the great development experienced by this country requires massive energy consumption which has in turn big impacts.

This is the reason why VIU was asked to organise two courses on this theme last March, one in cooperation with MOST on *New and Renewable Energy*, and the second one with the Beijing Municipal Environmental Protection Bureau, on *Energy Efficiency and Renewable Energy*.

The two training courses offered the participants an overview of the legislative background at European and Italian levels, in order to explain the development of energy policies in the past years. MOST delegates had the chance to discuss these topics during their stop at the Department of Public Law of Siena University, where an environmental law team is devoted to these issues. Practical experiences of implementation were also presented (e.g. the development of the European market in the electricity sector).

Different solutions to the energy problem were investigated through several lectures and visits. The participants discussed the opportunity of utilizing renewable energies, starting from what is currently being done in Italy in the various fields of solar, wind, and geothermal energy. Furthermore, experiences of energy recovery from waste and the new prospects of creating a hydrogen park in Venice industrial area following the principles of industrial ecology were presented.

As for energy efficiency in the residential sector, which counts for nearly 40% of the global energy consumption, great importance was given to the coupling of eco-building techniques with the use of renewables in order to reduce fossil fuels dependence and to optimize the use of energy as much as possible.

Waste Management, CASS

Italy, March 10-24 2007

38 participants

CASS and VIU jointly decided to give top priority to the same topics covered in 2006, i.e. Waste Management, Water Pollution, Energy Efficiency and Eco-building. Such a choice confirms them as hot topics for sustainable development in China.

The problem of waste management is central in urban development. Thus, it is necessary to face this issue both from the point of view of the best available technologies as well as of the legislation in charge of its regulation, in particular by offering comparisons among



⏪ × ⏩ i ⏴ ⏵ 3/4

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next

different ways of dealing with the problems by municipalities and private companies. For this reason, great emphasis was given to site visits as they represent the best way to show how different firms and municipalities deal with waste management issues. Particular attention was devoted to hazardous waste management: beside a lecturing session, the delegation had the opportunity to visit an incinerator plant near the city of Rimini built for solid and liquid hazardous waste treatment and specifically conceived for eliminating all major pollutants contained in this kind of waste product.

The management of waste in the city of Venice and in the Veneto Region was used as a case study to show how Italian legislation is applied and, hence, the results gained. The participants visited the Recycling Center of Veduggio, which locates in a small town in Venice's mainland and operates in an Italian region in which the percentage of waste recycling is growing fast. Waste water treatment was also explored through the visit of the integrated treatment plant of Treviso Municipality, 30 km from Venice, which demonstrated how it is possible to recover electricity by using anaerobic digestion and organic stuff deriving from separate waste collection.

Water Pollution Prevention and Control, SEPA

Italy, March 17-31 2007

23 participants

Nowadays, water pollution in China is a major problem asking for urgent actions. Rapid and unregulated growth linked to a new industrial and urban era makes water management a crucial issue. Water shortage, wastewater and high pollutant concentration together with the inadequacy of wastewater storage and treatment infrastructures require innovation of new ways of water management. In this context, SEPA and VIU organized a course on *Water Pollution, Prevention and Control*, held in Italy at the end of March. 23 trainees selected by SEPA attended the lessons and site visits that covered different aspects linked to water management.

The course started in Rome with an overview on the role of the Italian Ministry of Environment, Land and Sea in water pollution issues, especially in regard to pollution control and management of water supply. The course continued in Siena, where a wide investigation on the EU legislation and policy concerning water pollution control was offered.

In Venice, trainees had the possibility to visit Thetis' laboratories for environmental research, an integrated water management plant in Treviso, and also an integrated wastewater treatment plant in Marghera. In addition, they attended lessons on financial aspects of water pollution control and water pollution effects on human health.



⏪ × ⚖ i < 4/4

editorial

news and events

on focus

VIU training program

Echo from Participants

Activities Report

around us

what's next





Reduction of greenhouse gas emissions generated by the production of ozone layer-depleting substances

A study has been funded to assess, through the development of CDM projects, the potential reduction of HFC23 emissions - a powerful greenhouse gas - generated as a by-product of HCFC22 production, a well-known refrigerating fluid widely used in China.

On the basis of the results, an Italian company has already developed three CDM projects.

At present, most of the HFC23 generated in China is emitted into the atmosphere, as non-Annex I countries lack of any governmental regulation on such emissions. China is one of the world's largest HFC23 producers and production is rapidly increasing up to 200,000 tons. It is estimated that 19 Chinese companies

produced 145,000 tons of HCFC22, with 5,800 tons of HFC23 for a total of 67,860,000 tons of CO₂. Following the discussions with the producers, SEPA decided to establish a sectoral approach program to collect and decompose HFC23.

The major aims of the project are:

- _ A feasibility study to identify the proper Italian technologies and to study policies on pricing, CERs scenarios, and auditing and management methodologies.
- _ The realization of 4-5 incineration devices/treatment plants, centralizing the treatment under SEPA supervision.

China CDM Study Project

To promote CDM cooperation between developed and developing countries, the World Bank initiated a plan of national strategy research on CDM (NSS) in 1997,



investigating the CDM methodology, analysing the potential of GHGs emission reduction, the technical options and the incremental cost of emission reductions in CDM projects, and understanding the barriers of carrying out CDM activities. In the framework of this activity, the Italian Ministry for the Environment, Land and Sea and the Chinese Ministry for Science and Technology have carried out a study in order to promote Clean Development Mechanism projects in two key sectors of the Chinese economy: steel and building sectors. In both fields, specific case studies for carbon credits generation in the framework of Clean Development Mechanism have been selected.

Energy saving and efficiency improvement – Small boiler in Taiyuan

The project consists in the transfer of technology from an Italian boiler manufacturer to a suitable Chinese partner for the production in China of low capacity boilers (1 ton/h of steam), shifting from coal to diesel oil (lower carbon fuel), with a clear improvement in emission quality. The proposed technology not only grants the abatement of CO₂ emissions, but also reduces the emissions of other pollutants (CO, SO₂, NO_x, and ashes).

The short-term objective is the transfer of technology from an Italian to a Chinese boiler manufacturer, while in the long-term, the project aims at setting up a joint venture for the production and marketing of high efficiency boilers in China.

Elimination of CFCs

A medium-sized Italian company, working in close cooperation with China's largest company in this sector, will build the facilities and provide the products replacing CFCs, which have been banned by the Montreal Protocol on Substances that Deplete the Ozone Layer. CFCs are used in the production of polyurethane foam for the refrigeration industry, household appliances, motor cars, furnishings and in buildings.

This project, co-financed by the Multilateral Fund for the Implementation of the Montreal Protocol and the Italian Ministry for the Environment, Land and Sea, consolidates the role played by Italian technologies in the world's largest and most dynamic market for these items.

Urban Energy Plans (UENP) for a sustainable environment

UENP focuses its activities on energy saving and energy efficiency at municipal level, both in the short and long terms. The UENP effort is primarily centered in Suzhou Municipality and will be extended to Jinan and Taiyuan Municipalities, which are representative cities in China. In fact, the proposed approach and methodology will also be applicable, in future phases of SICP activities, to other Chinese cities with different environmental problems.

The objectives of this project are:

1. Evaluation of energy consumption in industrial and civil sectors in different municipalities in China. Initially, UENP will focus on Jinan, Suzhou and Taiyuan municipalities.
2. Identification of both short and long term interventions to reduce CO₂ emissions and to improve environmental quality.
3. Identification of related projects using Italian technology.
4. Development of a methodology to be subsequently applied to other municipalities in China.



Building Capacity for Clean Development Mechanism in China

The project Building Capacity for the Clean Development Mechanism is a joint effort of the National Development and Reform Commission (NDRC), the United Nations Development Programme (UNDP), and the China International Centre for Economic and Technical Exchanges (CICETE) with the support of the Italian Ministry for the Environment, Land and Sea, the United Nations Foundation and the Government of Norway.

The Government of China announced its approval of the Kyoto Protocol at the World Summit on Sustainable Development in September 2002. With the approval, China committed itself to be more actively involved in the activities related to the climate change area, especially the Clean Development Mechanism (CDM) under the Kyoto Protocol.

As a developing country, China is still behind as for energy efficiency and in the application of new and renewable energy, compared to advanced countries. Coal will dominate the energy supply in a foreseeable period, which brings serious environment pollution and GHG emissions. Implementing CDM means introducing investment and technologies to support the development of energy efficiency and renewable energy, and therefore contribute



to sustainable development.

This capacity building project:

- _ Strengthens China's institutions' ability to implement CDM projects;
- _ Provides stakeholders with skills and knowledge necessary to develop CDM projects in China;
- _ Provides "learning by doing" opportunities through field activities;
- _ Disseminates information on CDM to industries and other interested parties.

editorial

news and events

on focus

VIU training program

around us

what's next

VIU Training Activities April-July 2007

After the successful opening of the activities in the Advanced Training Program 2007 carried out in the first months of the year, VIU spring foresees **6 Training courses** and **a study tour** before the summer break. The training courses will mainly concentrate on the issue of **Pollution**, related both to water (CASS and SEPA) and air (MOST), thus confirming that pollution is an environmental problem of major concern for Chinese institutions, especially as it is strictly related to health.

Shanghai EPB will offer its participants the possibility of exploring **Environmental Management** from different perspectives, as diverse aspects such as hazardous waste management, environmental monitoring, environmental economy, and sustainable urban development will be part of the training agenda.

The Municipality of Tianjin will visit Italy for the first time and here they will carry on the study of **Sustainable Urban Development in Coastal Areas** started in Tianjin: in Italy they will have the opportunity of visiting most of the sites they were introduced at by the Italian lecturers during the opening training session held in China.

The second part of the **Distant-Learning Project** held in China last March will be held in Italy by arranging a Study Tour that will give the participants the important and rare opportunity to meet with some local authorities in charge of environmental management in Italy, as well as to visit some institutions and plants providing practical case studies of the theoretical issues presented during the distant-learning classes.

In the frame of the Tsinghua_VIU agreement, the Joint Workshop devoted to **Sino-Italian Comparative Studies on Sustainable Development** will be held at VIU premises in mid-April to open new perspectives of research cooperation between the two institutions.

On June 4-5, VIU TEN Center will host the **European Dialogue on the Energy & Climate Challenge** chaired by Dr. Corrado Clini and jointly organized by the Center for Clean Air Policy (CCAP), the Institut du Développement Durable et des Relations Internationales (IDDRI) and the Italian Ministry for the Environment, Land and Sea.



editorial

news and events

on focus

VIU training program

around us

what's next