L’IIF est une vieille institution, puisqu’elle célébrera bientôt ses 100 ans, mais elle sait utiliser des méthodes modernes de management. Ainsi, il y a quelques mois, l’IIF a créé un nouveau comité indépendant ayant pour mission d’analyser le bilan de l’IIF vis-à-vis du Plan Stratégique 2000-2003 et de préparer des recommandations pour le futur.

Ce Comité pour le Plan Stratégique (CPS) est composé de membres originaires de quatre continents, à parts égales de jeunes et de personnes expérimentées. Il a volontairement axé sa réflexion sur les points faibles de l’IIF sans vouloir recueillir les lourdis des actions les plus réussies depuis 1999.

Le CPS a proposé au Comité de Direction, au Conseil Science et Technologie et au Comité Exécutif des recommandations concrètes. Les recommandations essentielles contenues dans le rapport présenté ont été examinées, jugées pertinentes et approuvées par ces comités. Il faut souligner l’excellent climat dans lequel se sont tenues à la fois la réunion du Comité pour le Plan Stratégique et les réunions des 3 Comités déjà cités.

Je voudrais remercier tous les membres du CPS pour leur travail. Le rapport qu’ils ont préparé constitue une bonne base de travail. Ainsi Didier Coulomb disparaîtra, lorsqu’il prendra ses fonctions de directeur au mois d’octobre 2004, d’axes de travail clairement définis pour le début de son mandat. Je lui souhaite la bienvenue et bonne chance dans le cadre de ses nouvelles fonctions.  

Eric Granryd  
President de la Conference Générale de l’IIF
the year of the Congress, is due to the organization of the General Conference once every 4 years during the International Congress of Refrigeration.

The International Journal of Refrigeration (IJR)
Hein Auracher, Editor-in-Chief of the IJR, gave a presentation illustrating the highly positive evolution of the IJR. Hein Auracher highlighted the excellent citation impact factor of the IJR and emphasized that in 2003 172 articles from 35 countries had been submitted—a 27% increase compared with 2002.

Lecture by Prof. Clark Bullard (US)
Clark Bullard, President of Commission B2 (Refrigerating equipment) of the STC gave a remarkable lecture on June 11, 2004, on "Transcritical CO2 Systems: Recent Progress and New Challenges". The 130 participants enjoyed this lecture on state-of-the-art technology. Following the lecture, François Billiard gave a visual presentation retracing highlights at the IIR since 1999: contact iifiir@iifiir.org for copies of Clark Bullard’s lecture (French and English versions are available) and François Billiard’s presentation.

A working party on the Cold Chain in Warm Countries is about to launch its activities.

All readers of the Newsletter who are interested in taking part in these working parties are invited to contact the IIR: iifiir@iifiir.org

The French version of a course on Refrigeration and Preservation of Fruit and Vegetables in CD-ROM form is on sale: iifiir@iifiir.org The English version is under preparation. Other courses will be available soon.

Management Committee: election of Mr Mbesse Bolomiki

Mr Mbesse Bolomiki, new member of the Management Committee

These fruitful meetings have enabled the IIR to plot its course of action for the second half of 2004 and the entire year 2005.

Mr Mbesse Bolomiki was unaniously elected member of the Management Committee, which now has representatives from 4 continents: Africa, America, Asia and Europe.

IIR events

ECSLA-IIR partnership

- Fourteen years after having organized a successful conference on Progress in Refrigeration Science and Technology in the Food Processing Industry, the IIR returned to Dresden, Germany, for the official signing of a partnership agreement between the IIR and ECSLA (European Cold Storage and Logistics Association). The ceremony took place on June 17, 2004, during the annual ECSLA member Assembly. The agreement was signed by Mr Dimitri Vamvakopoulos on behalf of ECSLA and by Prof. Henk van der Ree, President of the IIR’s Executive Committee. During the Assembly, Mr Vamvakopoulos handed ECSLA’s presidency over to Mr Wim van Bon, and a seminar on trends in the cold chain, at which Joe Grealy presented trends in frozen-foodstuff transport and François Billiard commented on refrigerants and energy efficiency, was organized.

ECSLA members include European national cold storage and logistics associations and companies, through which ECSLA brings together 28.5 million m³ of cold stores, of which 83% operate at temperatures below –18°C. In his speech, Prof. Henk van der Ree recalled that, today, the Kyoto Protocol, food safety issues and changes in consumption patterns call for new scientific and technological developments, underpinning the very existence of organizations such as ECSLA and the IIR.

IIR Sub-commission D2 in Estonia

- IIR Sub-commission D2 on CERtification, Testing and quality of transport Equipment used for perishable foodstuffs and other temperature-sensitive materials (CERTE, its new name; formerly “Test stations”) met in Tartu, Estonia, on May 18-19, under the chairmanship of Geron Johansson (Sweden), with Jean-Michel Bonnal (France) as Secretary. It was a fruitful meeting involving 26 attendees from 16 countries, including Girolamo Panozzo (Italy), President of Commission D2; Mogens Eltsoe (Denmark), President of the UN Working Party WP 11 of the ATP Agreement; and Joe Grealy (Ireland), representing ECSLA (European Cold Storage and Logistics Association). The organization by Tõnis Tamm and EUROSERT, the company running the test station in Tartu, was perfect. Daniel Viard, Deputy Director of the IIR, participated in the opening. Among items handled, the new terms of reference of the Sub-commission were adopted, and recommendations to UNWP 11 I were prepared. The 2005 meeting will be held in Athens.

Cryogenics 2004

- The IIR conference Cryogenics 2004, the 8th in the series, was very successful: 120 participants from 23 countries, 49 papers by authors from 13 countries. The proceedings were available at the conference, in CD-ROM form and are on sale at the IIR: iifiir@iifiir.org A conference highlight was a marvellous dinner that took place during a cruise on the Vitava River on the historic steamer Vysheh. Fruitful business meetings of Commissions A1, A2 and C1, which brought together 50 people, were held during the conference. Vaclav Chrz, President of Commission A2,
Liquefaction and separation of gases, and Chairman of the Organizing Committee, should be greatly thanked for and congratulated on the perfect organization.

Another big event is under preparation in Prague: IICEC 21 (International Cryogenics Engineering Conference) to be held during the first week of May 2006. It will probably be organized in conjunction with the International Cryogenic Material Conference (ICMC) and the 9th Cryogenics 2006. François Billiard awarded certificates of recognition to Dr Vera Musilova, Prof. Stanislav Safrata, Dr Josef Ota and Dr Vaclav Chrz during the closing ceremony, and Prof. Ralph Scurlock (UK) summarized the salient papers presented. The conference ended on the day the Czech Republic joined the European Union, an unforgettable date.

Briefs

A visit to the Iranian Ambassador to France
François Billiard and Daniel Viard met the Ambassador of Iran, His Excellency Seyed Mohammad Sadegh Kharaizi, on May 6, 2004. The goal of this visit was to present the IIR’s role, activities and services to the highest representative in France of a large country in which cryogenics, refrigeration and air conditioning are key issues. Iran is the country which has the second largest gas resources and is interested in developing its liquefied natural gas market; it is a warm country which definitely needs air conditioning for its development and it also needs a perfect cold chain for storage, transport and distribution of perishable foodstuffs for its 70 million inhabitants (65% of whom live in urban areas). Mr Dorrani, who translated the IIR course on Recovery and recycling of CFCs in mobile air conditioning systems held in Tehran in September 2003, kindly translated into Farsi the discussion with the Ambassador. Mr Kharaizi told the IIR that he will forward the IIR’s documents to the Iranian authorities and detail the benefits Iran would derive from becoming an IIR member country.

On May 27, 2004, the Director General for Agriculture of Lebanon (Ministry of Agriculture), Mr Louis Lahoud, accompanied by Mr Farès Charbel, Delegate of Lebanon to the IIR, visited the head office of the IIR, to strengthen cooperation with the IIR, particularly in the fields of food quality and hygiene and standard-setting.

Course for American students in Beauvais, France
On June 30, François Billiard gave a 2-hour lecture to a group of American students from various universities in California, Illinois, Indiana, Missouri, Nebraska and Pennsylvania. Prof. L. Weller of the University of Nebraska accompanied the students. The students were invited by ISAB (Institut Supérieur Agricole de Beauvais) to attend a 1-month course in the context of an international programme.

Visit to Estonia
On May 19 and 20, Daniel Viard, Deputy Director of the IIR, met, in Tallinn, several government officials and representatives of trade organizations, in particular the Ozone Group Head from the Estonian Environmental Research Centre (Ministry of the Environment) and the Chairman of the Estonian Association of Refrigeration, in order to discuss Estonian membership of the IIR. He also met the person in charge of Education, Science and Technology issues at the French Embassy.

Cryomedicine 2004
F. Billiard and D. Viard held a meeting with Prof. Sajo Sumida and Dr Jean-Paul Homasson on July 6, 2004 at the head office of the IIR. Prof. S. Sumida, Honorary Member of the IIR, past President of Commission C1 (1985–1991) is the organizer of the IIR-co-sponsored World Conference “Cryomedicine 2004”.

New IIR publications

Refrigeration and Preservation of Fruit and Vegetables (CD-ROM and hard-copy version):
This training course has an attractive PowerPoint presentation. It covers the knowledge required to optimize refrigeration technology applied to fruit and vegetable preservation at each stage in the cold chain. For each topic, many figures, photos, diagrams and concise explanations are provided. Main topics: Refrigeration - Biological data on fruit and vegetables - Chilling, freezing, storage of fruit and vegetables - Preservation methods - Marketing channels. 269 slides.

Good Refrigerating Practice (updated manual):
This basic refrigeration training manual provides the fundamentals of refrigeration and good practice in the field of equipment maintenance, and focuses on environmental protection. 111 pages.

These 2 courses are available in French. The English versions will be published soon. ifiir@ifiir.org or www.ifiir.org/1enpublications.asp

which will take place in Tokyo, Japan, on November 18-20, 2004. Dr J.P. Homasson is the President of the IIR Commission C1, Cryobiology, Cryomedicine.

Distinction

François Billiard was named knight of the French Order of Merit. On April 8, 2004, Louis Lucas, Honorary Director of the IIR, presented François Billiard with the insignia of this decoration during a ceremony to which he invited many friends from the refrigeration sector.

Calls for Papers

Ammonia Refrigerating Systems, Renewal and Improvement, an IIR conference, will be held in the beautiful lakeside city of Ohrid, Macedonia, on May 6-8, 2005. The main themes are: design of modern ammonia systems and technological innovation; energy efficiency; applications of ammonia technology; ammonia systems in developing countries; standards; guidelines and training; awareness of the image and benefits of natural refrigerants. Deadlines — abstract submission: September 30, 2004; notification of acceptance: October 31, 2004; full papers: January 15, 2005; notification of acceptance: February 15, 2004.
Contact: Prof. Risto Cikonkov: ristoci@ukim.edu.mk - www.mf.ukim.edu.mk

Two IIR conferences will be held in Vicenza, Italy, famous for its fine classical architecture: i) Thermophysical Properties and Transfer Processes of Refrigerants (August 31-September 2, 2005) and ii) Commercial Refrigeration (August 30-31, 2005). The main themes are: i) Measurement and modelling of p, v, T, x behaviour; phase equilibria and transport properties; oil and refrigerants; heat and mass transfer with boiling, condensation and absorption in traditional and minichannel geometries; experiments and modelling of 2-phase flow, heat transfer enhancement, heat exchangers; performance of refrigerants; brines and ice slurries; carbon dioxide as a refrigerant; and ii) new technologies for energy saving; new and modified cycles and systems; system performance as determined by working fluids and lubricants; new refrigerants (CO2, HCs etc.) and brines; new components, on-site energy generation, illumination options; frosting and air-curtain...
New IIR Members

- The IIR welcomes the following new members:
  - Corporate members
    - Alaska Cold Stores (Athens, Greece) is specialized in the storage and distribution of foodstuffs. [www.alaskanet.gr](http://www.alaskanet.gr)
    - Cryomec AG (Allschwill, Switzerland) is specialized in transfer and process cryogenic pumps. [www.cryomec.com](http://www.cryomec.com)
  - Individual members
    - Mr. Philippe Balloue, France
    - Prof. Srinivas Garimella, US
    - Mr. Juan Carlos Ramos, Spain
    - Mr. Amir Kharazi, US
    - Mr. William Walter, Greece
    - Dr. William Worek, US

Obituaries

- Professor Roger Ulrich died at the age of 98
  Prof. Ulrich, a worldwide refrigeration expert, died on May 20, 2004. He contributed significantly to refrigeration research and played a great role in the IIR. Always happy to impart his knowledge, expertise, enthusiasm and time, he was actively involved in IIR scientific activities. Prof. Ulrich became a member of Commission C2 in 1960, and was President of Section C, Biology and Food Science, from 1975 to 1983. He also contributed significantly to the preparation of key IIR documents ("Red book" and "Blue Book") and was the Chairman of the Paper Committee of the 16th IIR International Congress of Refrigeration, which was held in Paris in 1983. In recognition of these activities, Prof. Ulrich was appointed Honorary Member of the IIR in 1983. We would like to offer our sincere condolences to his family.

- Frank Coda, Executive Vice President Emeritus of ASHRAE, died on June 25, 2004 after a long illness. The IIR pays tribute to his key contribution as a guiding force to the Board of Directors of ASHRAE over a 20-year period. Frank’s achievements include huge expansion of ASHRAE’s business base, refining of the standards writing process and the launching of the ASHRAE Learning Institute. The IIR extends its sympathy to Frank’s wife and children and will not forget Frank’s extraordinary will to live and dedication to ASHRAE.

Worldwide frozen chips market on the increase

In 2001-2002, frozen chip exports from the three main exporting countries – The Netherlands, Canada and the USA - reached an all-time peak of 2.22 million tonnes. This represents a 10% increase compared with 1999-2000. The Netherlands exported 990,000 tonnes, mainly to the European Union. Canada, exporting to the USA and South-East Asia, is now in competition with Australia and New Zealand, that exported 110,000 tonnes to South-East Asia. The USA not only exports to Japan and China, but is also a big consumer; however, for the first time, a 7% decrease in consumption was experienced, in the USA, over the 2001-2002 period.


Cryogen-Expo

The second international specialized trade fair Cryogen-Expo was held in Moscow in November 2003. This exhibition covered all cryogenic branches. It demonstrated and promoted the achievements of cryogenic engineering and technology manufacturers and included a seminar on Cryogenic technologies and the equipment prospects of development. The exhibition and seminar were attended by many international experts.

Following this success, the third Cryogen-Expo will take place in Moscow on November 16-19, 2004.

For further information: [http://www.mirexpo.ru](http://www.mirexpo.ru) or [info@mirexpo.ru](mailto:info@mirexpo.ru).

Source: A.M. Arkharov, Honorary Member of the IIR, Past President of Section A.

News from Downunder

- James Harrison Museum Appeal
  Known as the “father of modern refrigeration”, Yorkshire-born James Harrison pioneered ice-making machines in Geelong, Australia, and developed technology used in the early days of meat exports from Australia. Funds are being sought in order to set up a museum commemorating James Harrison’s achievements. The museum will be called the James Harrison Museum Inc., PO Box 693, Belmont, Victoria 3216, Australia. The IIR is proud to be associated with this project and has named one of its prestigious Young Researchers Awards after James Harrison. Fittingly, Australian-based David Tanner won the first James Harrison Young Researchers Award (presented at the Washington DC Congress in 2003) for his work in the refrigerated transport and storage fields.

- Distinction
  The 2004 winner of the Ian Syminton Prize, awarded for outstanding contributions to research and development in refrigeration in New Zealand, is Dr. R. Graham Bell. Dr. Bell is a member of IIR Commission C2, author of over 180 research publications and renowned for his role in reducing microbial risks to the benefit of the New Zealand meat industry.

In the news

Markets

- The European air-conditioning market was estimated, by Daikin, at 5.2 billion euros in 2003, representing a 10% increase compared with 2002. This market is predicted to rise to 5.7 billion euros in 2004. This strong increase is above all due to the unprecedented heat wave which occurred in summer 2003 in Europe. The estimated market division for 2002 was 26% in Italy, 19% in Spain, 12% in the UK and 9% in France. The room air-conditioner segment (roughly 50% of the market) has experienced fast growth and is predicted to expand from 3.2 million units in 2002 and 3.8 million units in 2003 to 4.3 million units in 2004.

Source: JARN, vol. 36, No. 3

- The Chinese market for refrigeration equipment (commercial, domestic and industrial sectors, not comprising air conditioning) was estimated, by BSRIA, at 1.8 billion USD in 2003, with an increase of between 5% and 8% per annum in all sectors apart from domestic, which has nearly reached saturation. Compressors represent 50% of sales. The fastest growing sectors are the commercial and the industrial ones, with a particularly strong increase in screw and scroll compressors in the rapidly expanding supermarket sub-sector. Refrigerants used in new equipment sold in 2003 are mainly HCFC-134a and HC-600a (50% each) in the domestic sector, HCFC-22 and HC-134a (about 30% each) in the commercial sector and HCFC-22 and ammonia in the industrial sector (roughly 30% each).

Source: [www.bsria.co.uk](http://www.bsria.co.uk)

- According to Euromonitor, the world frozen-food market is expected to grow by 14% between 2003 and 2008. The regions where frozen-food sales have increased the most between 1999 and 2003 are the Asia-Pacific area, Eastern Europe and Latin America. In constant values, the increase is +65% in Brazil, +53% in Russia and +41% in China. Source: Lettre de veille internationale, Ufifrance No. 14

- SEB Développement (Ecully, France) is a beverage manufacturer. [www.groupe-seb.com](http://www.groupe-seb.com)

- Private members
  - Mr. Philippe Balloue, France
  - Prof. Srinivas Garimella, US
  - Mr. Juan Carlos Ramos, Spain
  - Mr. Amir Kharazi, US
  - Mr. William Walter, Greece
  - Dr. William Worek, US

- IRHACE Conference
  The Institute of Refrigeration, Heating and Air-Conditioning Engineers of New Zealand (IRHACE) held a conference in Auckland on May 21-22, 2004. The conference, the first meeting of a sub-group of the Institute of Refrigeration, Heating and Air Conditioning Engineers of New Zealand, that exported 110,000 tonnes to South-East Asia. The USA not only exports to Japan and China, but is also a big consumer; however, for the first time, a 7% decrease in consumption was experienced, in the USA, over the 2001-2002 period.


- Nordic heat-pump markets
  In Sweden, heat pump sales reached a record 48806 in 2003. Until now, single-family homes were the main niche, but growth is expected to shift to apartment buildings.

Source: Swedish Heat Pump Association, Martin Forsén, Tel: +46 8 762 75

- Norway had record sales of 55,000 units in 2003 (more than double the 2002 sales level of 21,300 units). Outside split units dominate the market and Japanese manufacturers’ high-efficiency inverter R-410a models have secured a large share of the market, but competition from Chinese models is increasing. The Swedish firms IVT, Therma and Nibe dominate the ground-source heat pump market.

Change and the 14th Meeting of the Parties to the
Nations Framework Convention on Climate
The 8th Conference of the Parties to the United


www.ipcc.ch/activity/sprep.htm


Refrigeration industries and sustainable development: what are the


Source: HPAC Engineering, January 2004


Sound waves to chill ice cream


On April 15, 2004, Earth Day, Ben & Jerry’s announced the development of an environmentally friendly thermoacoustic chilling prototype. Following a company-wide audit of Ben & Jerry’s refrigeration uses and its impact on the environment, acousticians at Pennsylvania State University, in coordination with Ben & Jerry’s and Unilever, developed the prototype. This prototype uses a “bellow bounce” resonator with high-amplitude sound waves in an inert gas – helium, which is converted into cooling power. According to Pennsylvania State University, the thermoacoustic refrigeration process has many advantages, in particular less maintenance, due to the elimination of mechanical equipment, and better temperature control.

This new compact approach to thermoacoustic chillers is expected to be easily adopted for beverage vending machines and ice-cream sales cabinets, as well as for cooling microprocessor chips in computers. Although the main advantage of thermoacoustic chilling is being more environmentally friendly through the use of natural inert gases, many obstacles to its development remain, particularly cost.


Fuel cell vehicles (FCVs) equipped with CO₂ air-conditioning systems


In most automotive air-conditioning systems, fluid, heated by the engine, is circulated through the heater to warm the passenger compartment. However, in FCVs and electric vehicles, a heat source is lacking, as they do not have an internal combustion engine. The first FCVs, powered by a hydrogen battery, have only been in circulation in the US since December 2003. This new system, developed by Nissan for X-Trail FCVs, using CO₂ as the refrigerant, enables manufacturers to overcome the difficulty of heating the vehicle passenger compartment. The system is particularly effective in heating a vehicle, as the CO₂ is compressed and supplied to the passenger compartment heat exchanger from which it radiates heat. Further developmental work is under way to enable the use of this CO₂ air-conditioning system in vehicles powered by a gasoline engine.

Source: http://www.nissan-global.com/EN/STORY/0,1299,S19-CH180-LO3-TII024-CH767-IFY-MC109,00.html


Chilled ceilings and beams


Chilled beams and ceilings, considered to be environmentally friendly, aesthetic, silent and energy saving, are attracting a great deal of interest. BSRIA (the Building Services Research and Information Association) estimates that the market, mostly in the commercial sector where a high degree of comfort and minimal noise are required, has reached a level of £18 million per year in the UK and is growing. Chilled ceilings deliver convective and radiant cooling and/or heating. The surface temperature is typically 15-18°C. Chilled Ceiling Association: http://www.feta.co.uk/ccal

Architect Moon, a chilled beam with integrated lighting manufactured by the Lindab Group (www.lindab.com), has won the Comfort & Design Award at Mostra Convegno Expocomfort 2004 in Milan.
The hole truth

The closely monitored ozone hole above Antarctica is renowned for its unpredictable seasonal behaviour and changes in shape. High-altitude clouds form above Antarctica as soon as the temperature goes below −85°C in winter and spring, seasons during which the hole is at its peak. In spring, sunlight warms the stratosphere and the hole opens up. In its January 22, 2004 issue, the UNFCCC Web site provides, for each country, the percentage of total emissions. The site also displays the declarations made by various countries and regions. You can also consult www.iir.org/2enreglementation_serre.asp# protocol (IIR summaries, glossary, news and useful links).

Conferences co-sponsored by the IIR

2004

The Kyoto Protocol: ratification status

The Kyoto Protocol aims to reduce greenhouse gas (including HFC) emissions in developed countries by at least 5% with respect to the 1990 levels, during the period 2008-2012. The Kyoto Protocol was open for signature as of March 16, 1998 and will enter into force only when it has been ratified by no less than 55 Parties incorporating Parties included in Annex I (developed countries) which accounted for at least 55% of CO2 emissions in 1990. According to the latest UNFCCC status of ratification information (dated April 15, 2005), 84 Parties, representing 44.2% of emissions, have currently ratified. If the Russian Federation (17.4% of CO2 emissions) confirms its (other contact: All Al-Mudhal, Scientific Committee Chairman) www.imc2004.com Commissions: C1, B2, E1, E2

2005

St. Petersburg - Russia – October 29-31, 2005
Preservation of Greenhouse Resources
Valentin I.Ananiev,
Fax: +7 095 299 22211 or 243 7429
ananiev@cityline.ru or ananiev@rol.ru or ananiev@mail.ru
Commission: C1

Sydney - Australia – November 10-12, 2004
Postharvest Unlimited Downunder
Carolyn Moorshead,
Fax: +61 3 9614 8848
ananiev@cityline.ru or ananiev@rol.ru
www.rol.ru
(www.rol.ru)

Tokyo – Japan – November 18-20, 2004
Cryomedicine 2004
Fax: +81 (0)47 716 9374 – cryo@iikei.ac.jp
http://homepage2.nifty.com/cryomedicine/
Commission: C1

Kuwait City – Kuwait – December 5-8, 2004
International Mechanical Engineering Conference Muhammad Al-Hajeer,
imec@imec2004.com
(www.imec2004.com)
Commission: C2, D1, D2

Leuven - Belgium – May 29-30, 2005
Model-IT 2005
Bart Nicolai,
Fax: +32 16 323955 – bart.nicolai@agr.kuleuven.ac.be
Commissions: C1, D1

Las Vegas – USA – May 30-31, 2005
8th IEA Heat Pump Conference 2005:
Global Advances in Heat Pump Technology, Applications, and Markets
Mrs Melissa Lapa,
Fax: +61 3 574 9331
hp2005@crnl.gov
Commissions: E1, E2, with B1, B2

2006

Leuven - Belgium – May 29-31, 2006
Model-IT 2006
Bart Nicolai,
Fax: +32 16 323955 – bart.nicolai@agr.kuleuven.ac.be
Commissions: C2, D1

Las Vegas – USA – May 30-31, 2006
8th IEA Heat Pump Conference 2005:
Global Advances in Heat Pump Technology, Applications, and Markets
Mrs Melissa Lapa,
Fax: +61 3 574 9331
hp2005@crnl.gov
Commissions: E1, E2, with B1, B2

Conference of the Parties (COP-10) scheduled to take place on December 6-17, 2004 in Buenos Aires. More on www.unfccc.int/resource/kpstats.pdf
The UNFCCC Web site provides, for each country, the percentage of total emissions. The site also displays the declarations made by various countries and regions. You can also consult www.iir.org/2enreglementation_serre.asp# protocol (IIR summaries, glossary, news and useful links).

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