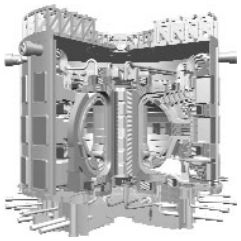

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TWENTYFIRST IAEA FUSION ENERGY CONFERENCE

by Dr. A. Malaquias, Physics Section, IAEA

The 21st IAEA Fusion Energy Conference was held in Chengdu, People's Republic of China, on 16–21 October 2006. It was hosted by the Government of the People's Republic of China through the China Atomic Energy Authority (CAEA) and the China National Nuclear Corporation (CNNC). The local co-hosts were the Southwestern Institute of Physics (SWIP) and the Municipal Government of Chengdu.

The conference centre was located in the outskirts of the City of Chengdu and provided all necessary facilities for the smooth running of the conference.

The conference was opened by Mr. Werner Burkart, Deputy Director General of the IAEA in representation of Mr. Mohamed El-Baradei, Director General of the International Atomic Energy Agency. In his welcome address Mr. Burkart underlined the remarkable success achieved with the decision to build ITER and noted that ITER might be the largest international scientific project ever, involving about half of the world's population. Since more challenging steps are still required in order to deliver net power from fusion, Mr. Burkart emphasized the importance of the Agency's continued involvement: "*We have to be prepared for the next step – a demonstration of fusion power to work over a long time period. As with ITER, I am sure that the path will be complex, and many discussions and decisions will be necessary before the first plant can become operational. The Agency, as it did in the development of nuclear fission energy, stands ready to serve its Member States in the field of fusion. The traditional roles of the Agency are as facilitator of knowledge promotion, as the international body for agreement on safety standards, and as the independent voice of nuclear energy to the public. We are ready to continue such roles as and when they are relevant to fusion development, and as and when they are requested from us.*"

Following the welcome address of Mr. Burkart, Mr. Zhang Huazhu conveyed a congratulatory message on behalf of the Vice Premier, Mr. Zeng Peiyan welcoming the delegates to the People's Republic of China and wishing them a successful and fruitful conference.

Mr. Xu Guanhua, Minister of Science and Technology, expressed the commitment of China to contribute to the path of fusion energy development. Fusion is a challenging endeavor that requires still a few decades of research and developments before it can deliver net power, but China is determined to support it and engage in strong international collaboration.

Mr. Kang, President of the China National Nuclear Corporation, gave an overview of China's strategic three-step approach for nuclear energy development: "*thermal reactor - fast reactor - fusion reactor*". Noting the contribution to the development of China's nuclear power industry, the CNNC support for the fusion option lies in the research developed at the Southwest Institute of Physics where the HL-1 and HL-2A devices were built.

The Vice Governor of Sichuan Province, Mr. Wang Huaichen, and the Vice Mayor, Mr Liu Peizhi of the Chengdu Municipality, in their addresses expressed their pleasure to host the conference and welcomed the delegates to the City of Chengdu. Chengdu is becoming an important international center, attracting as place of venue many conferences, as well as tourists from the whole world who come to visit the many natural and gastronomic attractions of the Sichuan Province.

The Fusion Pioneers Memorial session started with a homage to the pioneers of fusion research who have passed away in the last two years. Professor Kaw, the Chairman of the International Fusion Research Council,

called the ITER representatives to join in a minute of silence honoring the contributions of the following pioneers: Dr. Dieter J. Sigmar (US), Dr. Harold Eubank (US), Dr. Hiroshi Kishimoto (Japan), Professor Nobuyuki Inoue (Japan), Dr. Robert Dory (US), Professor Shigeo Nagao (Japan), Professor Tadashi Sekiguchi (Japan), Professor Tatiana Davydova (Ukraine), Professor Vladimir K. Chernyshev (Russia), and Professor Wang Enyao (China)

Academician E. Velikhov and ITER Director General K. Ikeda gave the two lectures of the Fusion Pioneers Memorial session.

Academician Velikhov addressed the fast track approach to fusion power starting from the past achievements to the present perspective of fusion, i.e., before ITER, during ITER and towards DEMO, and discussed the future in terms of energy demands and fusion opportunities. It is expected that when once available, by the middle of the century, the importance of fusion on the energy market will be at the same level as fast breeders and solar power. On the path of fusion energy, he pointed out that the main components for the success of the ITER project are all available: the large international collaboration, the success achieved with Large Tokamak and Stellarator Programmes (TFTR, JET, JT-60, DIII-D, TORE-SUPRA, T-15, W7-AS, LHD) in physics basis development, the progress in tokamak technologies (Magnets, Heating&CD, MHD contro, etc.), the implementation of a Broader Approach, and the awareness of an urgent need to face the fast growth of the energy demands in the world. However, the developments needed are challenging; among others, the material requirements for a DEMO power plant still have to be met, in particular for the divertor: "*In my view, the divertor is the most critical component on the way to the reactor*". In a more technical note Velikhov argued that possible divertor alternatives for DEMO such as limiter-like radiative configurations would be worth to be investigated. He summarized the basic physics and technology challenges that fusion will meet and emphasized the need for a Broader Approach and accompanying programmes for material developments. Velikhov expressed that in his view DEMO and material development programmes should be developed on a broad international approach as the fusion community needs integration of resources which will deliver results faster and cheaper. He stated that the "*IAEA supervising the fusion development will be natural*". The problem of facing the growth of the energy demand from present to the next century in a sustainable way will require global efforts. The IAEA prevision is that 16 trillion dollars will be invested in the next 30 years in the energy sector. At present, one quarter of the world population still do not have access to electric power and in 2030 this number will be of 1.4 billion representing about 1/6 of the global population. Present forecasts show that by 2025 regarding the energy consumption the difference between the larger and the smallest per capita consumption groups of people will be no longer distinguishable in the global consumption picture. Academician Velikhov pointed out that "*levelling of the energy consumption doesn't necessarily mean the levelling of welfare – it rather indicates the growing capabilities of the developing countries to consume more energy (i.e. a technological levelling)"* and concluded: "*Present economic mechanisms promote active transfer of capital to the developing countries. However, the only alternative to assure their welfare would be a new technological breakthrough, capable to provide their relative energy independence*".

ITER Director General, Mr. Kaname Ikeda, presented the status of the ITER project. ITER is the essential next step in the development of fusion. ITER is the world's biggest fusion energy research project developed under international collaboration, involving China, the EU, India, Japan, Korea, Russia, and the US. ITER will aim at operating up to steady state conditions with a power production of 500 MW from the fusion plasma, 10 times more than necessary to sustain it. ITER has dimensions comparable to a power station and shall demonstrate or develop all the new technologies required for fusion power stations, except for materials endurance. The forthcoming steps are obtaining the license for construction and operation, for about 20 years. ITER construction costs will be about €5bn (over 9 years) and €5bn for operation and decommissioning. The construction cost sharing among parties is sliced in 3 main groups. Group A, mainly to be provided by the Host industry partners (buildings, machine assembly, system installation, piping, wiring, assembly/installation labour, etc…), Group B, "residue of systems", to be funded by the ITER Organization, and Group C, "contributions in kind", major systems provided directly by the Parties. General roles and responsibilities have been identified for the construction phase to be shared between the ITER International Organization (Planning/Design, Integration, QA, Safety, Licensing, Schedule Installation, Testing and Commissioning and Operation) and the Parties Domestic Agencies (Detailing Design, Procurement, Delivering and Support installation). The near term targets have been listed: i) the clearing of the construction site and preparation for road and utility connections (Spring 2007), ii) the design review involving the physics community leading to revised baseline (Spring 2007) for approval by ITER Council, the finalizing of technical specifications for calls for tender for vacuum vessel, superconducting coils, building & excavation design, and iii) submission of

Preliminary Safety Report (by end 2007). The final ITER agreement is underway: the Agreement was accepted by the negotiators on 1 April 2006 April. The write-up of the final documents was initiated on May 24th and should be signed on 21 November 2006. ITER Organisation should then become a legal entity and should be able to execute all its functions. Of main priority is the recruitment of staff to the ITER-IO which is expected to increase from present 120 to about 620 in the next 7 years. Most of the staff working at the three ITER Joint Work Sites (Garching, Naka, Cadarache) will migrate to the only remaining site after 2006, in Cadarache. Mr. Ikeda in his conclusions noted that the Parties are making good progress in implementing their obligations, the Project Team is settling in Cadarache, the design review has begun in September and will strengthen the involvement of all stakeholders, Domestic Agencies and Project Team members. He finally stressed that the ITER Organisation and Domestic Agencies need to be established as soon as possible to effectively execute all tasks of the construction project.

The Fusion Pioneers Memorial Session was followed by the scientific programme divided by topical sessions on theory and experiments, along with daily poster sessions. The topics covered during the conference were:

— Magnetic Confinement Experiments
— Magnetic Confinement Theory and Modelling
— ITER Activities
— Inertial Fusion Experiments and Theory
— Innovative Confinement Concepts
— Fusion Technology and Power Plant Design
— Safety, Environmental and Economic Aspects of Fusion.

The special ITER Evening session was chaired by N. Sauthoff. Two presentations were given:

— by P. Garin on the “ITER site preparation”; and
— by S. Matsuda on “The Broader Approach Activities Toward Fusion Demo Reactors”.

ITER Principal Deputy Director General, N. Holtkamp, moderated the session.

All scientific papers will be included in the proceedings of the conference on CD-ROM during the first quarter of 2007 still to be edited by the IAEA. Five summaries were presented on the various topics and will also be included in the proceedings.

The decision on the ITER site was been taken in the period between the last IAEA Fusion Energy Conference in Vilamoura, 2004, and the present one, thus making the 21st Fusion Energy Conference a symbolic landmark by gathering the largest number of scientists at the very beginning of the ITER era. This is a particular reason for celebration for the IAEA, given its involvement in ITER since the very initial steps in 1988, having held the auspices ever since and having supported the sequential development phases of ITER: CDA, EDA CTA and ITA. Establishing the ITPA topical groups, hosting high level negotiation meetings and participating in the signing ceremony of the ITER Agreement are essential contributions and the ITER Parties have recognized the importance of the IAEA role. In the words of IAEA DDG Burkart “*These small steps are symbolic for the Agency regarding the trust and collaboration that we have long enjoyed with the ITER Parties, and that are the guarantee for our future close involvement with the project”.*

Another important achievement was celebrated at the conference. The first tokamak in the world using only superconducting coils at mega-ampere scale has successfully obtained its first plasma just 2 weeks before the conference opening. The EAST tokamak construction was initiated in 2000 at the Chinese Academy of Sciences - Institute of Plasma Physics, Heifei and stands now ready to contribute to the main stream fusion research.

For the first time the International Atomic Energy Agency has awarded an annual prize to honor exceptional work, as published in the journal Nuclear Fusion. The Japan Atomic Energy Agency has generously made a contribution of $2500 to the award.

TC Luce et al. were awarded the prize for their paper ‘Stationary high-performance discharges in the DIII-D tokamak” (Nuclear Fusion 43 (5) pp. 321-329). The paper outlines a tokamak scenario that can maintain high fusion performance at reduced plasma current (compared with the conventional tokamak operational scenario), thereby lessening the potential for structural damage in the event of a major disruption.

The conference closing remarks and acknowledgements were made by the Chair of the Programme Committee, Prof. Karl Lackner and the IAEA Scientific Secretaries, Messrs. Guenter Mank and Artur Malaquias.

Statistical Overview of the Conference

The Conference was attended by 708 participants from 39 countries and 3 international organizations. The Programme Committee selected a total of 478 papers distributed over 21 overview talks, 87 regular talks (including 23 rapporteured papers, 3 post-deadline talks) 362 regular posters, 3 overview posters and 5 post-deadline posters. In addition, two fusion pioneer memorial lectures, five summary lectures and two ITER evening lectures were given.

Preprints and presentations are available from
http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=149

Next Fusion Energy Conference

The 22nd IAEA Fusion Energy Conference will commemorate 50 years since the 2nd UN Conference on Peaceful Applications of Atoms which was held in 1958 at the United Nations premises in Geneva. The conference is expected to be held during the period 13–18 October 2008.

FUSION EXPOSITION

IAEA Headquarters, Vienna, 20–24 November 2006

As announced in the previous issue of the ITER ITA Newsletter, an exhibition in recognition of the Agency's support to the ITER Negotiations was organized at the Rotunda of the Vienna International Centre during the week 20–24 November. The exhibition had been initiated by the European Commission and was organized under the European Fusion Development Agreement (EFDA) and hosted by the IAEA Physics Section, Division of Physical and Chemical Sciences.

Please see the speeches delivered at the official opening on Monday, 20 November, 2 p.m., in the boxes below.

Dr. W. Burkart, Deputy Director General, Nuclear Sciences and Applications, IAEA

Excellencies, distinguished guests, dear colleagues,

We all are aware about the world's craving for energy. Availability and costs – the two are linked – make or break our economies and decide on our well-being. The ever growing needs cannot be met without recourse to many different sources, and especially those which do not contribute carbon dioxide to our atmosphere. Within this scenario, the Agency assists its Member States in their use or planning for nuclear energy. This includes energy from controlled fusion, harnessing the energy that powers the Sun and all the other stars.

We are not able to use the power of the Sun's gravitation for confining fusion plasma; we have to construct a device which allows us to simulate the heat and pressure conditions existing in the Sun. 50 years ago such a device was proposed by Russian researchers; the tokomak. During the last years the main scientific achievement led to the project on the International Thermonuclear Experimental Reactor, called ITER.

ITER will represent a major advance in fusion research. It will be the largest international cooperation project ever undertaken; it is supported by China, the European Union, India, Japan, the Republic of

Korea, the Russian Federation and the US. ITER will enable the international community to study new concepts and new materials that need to be developed for the construction of future fusion power plants. The sheer magnitude of the investments being committed by the ITER partners demonstrates their belief and commitment in the future of fusion energy. Tomorrow I will have the honour to attend the official signing of the ITER Agreement at the Elysee Palace in Paris. The contribution of the Agency from the very beginning of the project is highly recognized by all partners. We were the facilitators in sometimes difficult negotiations, but now ITER is a legal entity of its own. In this light, the exposition which we will open shortly could be seen on one hand as signifying the end of one era in fusion, but on the other, the beginning of the next, most important phase.

This ITER fusion exposition has been organized in recognition of the Agency's involvement in the ITER negotiations. Since 1988 and within formal protocols since 1992, the Agency has supported the ITER process, and moderated the discussions for the ITER siting decision. Every year about 700 scientists came to Agency meetings and conferences, and we may regard this exposition also as recognition of their work to make ITER and fusion power a success.

Please look closely at the different parts of the exposition: There is more than ITER! Although ITER marks the main experimental progress in fusion – it is the world's biggest international scientific project with a total investment of about 10 billion EUROs - there are many other supporting projects on display. There are devices called stellarators, there is inertial fusion, and there are reversed field experiments, and aspects of commercialisation of fusion energy. And last but not least, there is the need for sharing nuclear knowledge to a world interested in fusion energy. It means the Agency can assume a new function between ITER and the many Member States outside the elite club of seven, but who have a keen interest to be part of this exciting endeavour. We should also recognize that, as with the dawn of fission energy, fusion will generate an excitement that has been missing from nuclear technology for some time. It will drive new generations of scientists, not least in physics and materials research.

In future, fusion energy will move from the scientific research to engineering work. As soon as the scientists and engineers working worldwide on fusion, and specifically those on the ITER plant in Cadarache, show that the technological aspects of fusion are manageable, they will move to the next step, DEMO, a Nuclear Fusion Energy power demonstration plant, where also costs, long-term safety and environmental sustainability will matter. It probably will not be electricity too cheap to meter, as an early statement at the beginning of the age of fission energy said, but both from the fuel, it is in seawater, and the waste, it is a very promising alternative.

I hope you will enjoy this exhibition. It will give you an insight – but still will allow you to question many things. This exhibition might stimulate more scientific exchange and I hope that you and the representatives of the Member States during this Board of Governors week will experience the feeling to be part of a new horizon in nuclear sciences and applications, and of an exciting new development.

Messrs. Burkart, Zurita and Weber (from left)

Dr. Y. Sokolov, Deputy Director General, Nuclear Energy, IAEA

Dear Ladies and Gentlemen, good afternoon

Mr. Burkart, thank you for introducing me. To this I would add that I have been involved in fusion studies and then in ITER activities since 1971. I started my career, first, as a scientist in the area of plasma physics and then was absorbed by fusion engineering and reactor designs. I led the Russian team, as well as an international team, during ITER's Conceptual Design Phase as a member of ITER's Management Committee.

Afterwards I oversaw the initiative's progress and mechanisms for implementing the ITER project as a member of the ITER international Council and the top state executive for fusion programmes in Russia. I have said all of this just to convey to you that I am really pleased and proud that ITER has reached the stage of starting implementation, as was said by Mr. Burkart.

Today we are here to open this ITER exhibition in recognition of the Agency's support to the ITER negotiations. This is a very important element of the Agency's work. The Agency and its Directors General, Dr. Hans Blix and Dr. Mohamed ElBaradei, played a key role as a mediator on many crucial occasions in ITER's history. But this is not the only role that the Agency has played in contributing to fusion and ITER development.

In general the Agency's charge is broad, and nuclear power, including fusion, has been part of the agenda from the start. It is now one of the most important subjects in the IAEA's programme, taking into account sustainable development needs, continuing and growing demands for energy supplies, concerns about climate change, etc.

It has always been obvious that the IAEA could not command the funds needed to promote the use of nuclear power by building demonstration or power reactors. Its role has been rather to encourage the exchange of scientific and technical information on reactor technology, provide advice, promote training, evaluate reactor projects and carry out feasibility studies. This is exactly the way the Agency acts in the area of fusion.

Let me go a little bit into the history.

As I have said, nuclear fusion has been a part of the Agency's nuclear programmes for many years. It is considered as the most challenging possibility for nuclear energy from the technological point of view and is potentially extremely attractive with regard to fuel resources, safety, environmental impacts and waste management. Fusion research was declassified at the 1958 second Geneva Conference, and in October 1960 the IAEA published the first issue of the quarterly journal Nuclear Fusion. The IAEA's series of International Conferences on Plasma Physics and Controlled Nuclear Fusion Research in Salzburg, Culham, Novosibirsk and Madison, in parallel with the enormous efforts of plasma physicists both on scientific research and on the promotion of extensive open exchanges of research results, have succeeded in building up broad international cooperation in fusion. Among other things, these efforts led to the establishment of cooperative international

Mr. Sokolov at his opening speech

activities (in the USA, Japan, the EC and the Soviet Union) to develop a conceptual design for the fusion reactor INTOR. Subsequently, as successful international fusion cooperation to realize 'the energy of the sun on the Earth' gained political recognition, these four countries took the lead in launching ITER (the International Thermonuclear Experimental Reactor), to be carried out under the auspices of the IAEA.

Even without direct involvement in managing the ITER project, the IAEA has played a very important role – by assisting in consolidating the international fusion community, focusing its plasma physics research on the problems of the ITER design, making this research more results oriented and very effectively encouraging worldwide investments in fusion. ITER is a hugely visible example of how big international projects can be organized and how the IAEA can position itself in such projects.

For years ahead I can imagine the Agency's role in assisting in the preparation of the international fusion community for the experiments on ITER, in accumulating the best human resources for such work, in coordinating fusion and fission studies of further technological issues relevant to both programmes, such as structural material development and others.

Now ITER is a cooperative effort of seven countries to build the first fusion experimental reactor. It has to be capable of producing a self-sustaining fusion reaction and demonstrating integrated operation of the technologies essential for a fusion power plant including the handling of the plasma energy flow in the divertor, the test of tritium breeding modules and steady state plasma control and operation.

ITER in Latin means 'a way'. And in conclusion I would say that this is a way to a very worthy goal and I would wish to those who selected this way all success, luck and satisfaction in pursuing it and achieving that worthy goal.

Thank you for your attention.

Dr. A. Zurita, Representative of the European Commission

Excellencies, Deputy Directors General, Prof. Burkart and Prof. Sokolov, dear Prof. Weber, Ladies and Gentlemen,

I am very honoured to be today at the International Atomic Energy Agency (IAEA) representing the European Commission at the opening of this exhibition on Fusion Energy Research.

You have indeed chosen a good moment to host our Fusion Expo. As you know, the seven Parties engaged in the ITER project meet tomorrow in Paris to sign the Agreement on the establishment of the International ITER Organization, following last year's decision to site ITER at the Cadarache research centre in France. With this signature, the ITER Parties are demonstrating their determination to pursue the research into fusion energy in the widest possible global framework.

The ITER project brings together seven international partners: China, India, Japan, Russia, South Korea, the United States, and the European Union. Together they will construct and exploit the ITER reactor, which will be the next major experiment on the route to the realization of fusion energy for the benefit of all mankind.

In this regard, the special role played by the IAEA in promoting this co-operation and facilitating the negotiations is much appreciated by the international community. This special IAEA role, also demonstrated through its auspices to several working groups notably to the International Tokamak Physics Activity (ITPA), the publication of the ITER Physics Basis as particular edition of the IAEA Nuclear Fusion journal, and the hosting of numerous conferences and meetings, is particularly recognized by the European Commission.

Why have these partners come together in this project? In the modern world we are totally dependent on an abundant, reliable and reasonably priced supply of energy. We have all felt the effects of the increases in the price of petroleum. In the next decades, petroleum and natural gas will become increasingly more scarce and expensive. At the same time, there is growing concern about the environmental effects of burning fossil fuels. Our children will not be able to use fossil fuels as we do today. They will need energy, but we do not yet know where all of it will come from.

Therefore, we need to develop new energy sources and fusion is one of them. It is not the only option for future energy production, thus the energy issue is so important that we must pursue all the options. But fusion has the potential to play a major role because it has some significant advantages. It has the potential for large-scale generation of electricity at economic prices, and it will produce no greenhouse gases. Most important, a fusion reactor cannot have a major nuclear accident and the activated materials will be stored for a relatively short time. The raw materials for the fusion fuel are abundant everywhere on earth, so that no one will have a monopoly on the resources needed for fusion power.

The potential of fusion energy is enormous. For that reason the European Union funds with about 350 million Euros per year the fusion research carried out in all the Member States by the European Fusion development Agreement (EFDA) and a total of 26 Euratom Fusion Associations. The Fusion Association ÖAW (Österreichische Akademie der Wissenschaften) is significantly contributing since 1996 in physics and underlying technology and is composed of various research groups, i.e. TU Wien, Universität Innsbruck, TU Graz, Atominstitut Wien and Erich-Schmid Institut für Materialwissenschaft. The European Commission recognizes the excellent work performed by this Association during the last years under the direction of the Head of Research Unit Prof. Winter, who unexpectedly and unfortunately passed away last week.

The European Commission hopes that this exhibition will inform the visitors of the potential of fusion energy and will attract to this field of research the young students who will -we hope- become scientists and engineers to make fusion a reality.

Thank you very much for your attention!

Dr. H.W. Weber, Institute Director, Atomic Institute Vienna

Ladies and Gentlemen,

It is a great honour and pleasure for me to say a few words on behalf of the Austrian fusion community on the occasion of the opening of the Fusion Expo here at the International Atomic Energy Agency this afternoon.

The Austrian Fusion community is still under shock after the completely unexpected passing-away of Professor Hannspeter Winter, the Head of our Research Unit in the frame of the European Fusion Programme. He left us about ten days ago while doing his regular fitness training – jogging in the Prater – which is very close to this place and even closer to my institute, the Atomic Institute of the Austrian Universities. The Atomic Institute belongs to the Vienna University of Technology, operates the only remaining research reactor in Austria and has actually very close ties to the Agency, especially related to the training of your Safeguard Inspectors.

Fusion research has quite a long tradition in our country. However, the main focus has been on plasma physics, with many small groups at various Austrian Universities pursuing small projects in all areas of this field, but not necessarily related directly to nuclear fusion or large fusion devices, such as ITER. When Austria joined the European Union more than 10 years ago, the Commission for Nuclear Fusion Research at the Austrian Academy of Sciences – that I'm chairing – and Hannspeter Winter worked together to form the Association EURATOM – OEAW. This has developed into a real success story by streamlining work

on plasma physics in Austria, encouraging new projects in the area of fusion technology, particularly on the subjects “Magnet structure and integration” as well as “Plasma facing materials” and “Tritium breeding”, and finally by bringing Austrian high-tech companies on board, for instance Böhler-Edelstahl, who developed the low-activation steel Eurofer, and Plansee with their activities in first wall and divertor materials. In fact, about 2 or 3 years ago, the Austrian association ran the 4th largest fusion technology programme within EURATOM, right behind the three large German associations.

During the past two or three years, our main task was to support the decision making process for the construction of ITER at all levels, including the political level in Austria. We are all very grateful to the Agency for providing a neutral and independent forum of information exchange and negotiations, which finally led to consensus to build ITER in Cadarache in the south of France. Of course, this decision shifts the emphasis of international fusion activities from a “research” subject to a very concrete “construction” phase, which might make the participation of small associations, such as the Austrian, rather difficult in the future. We are, therefore, being in the middle of considerations and negotiations with other bigger associations about how to re-organize our future work and the participation in this huge international programme – and it is particularly here that we will miss the visions and the leadership of Hannspeter Winter the most.

In any case, let me conclude by saying that the most important thing right now is to inform the general public about the challenges and the chances of nuclear fusion and its potential for supplying future generations with energy – an issue that has become drastically evident in the course of the recent energy crisis and with the increasing awareness of greenhouse gas emissions and their possible implications on our climate. I have given many lectures on this subject to non-expert audiences recently and found an enormous openness for new solutions and substantial concern about the slow and hesitant attitude of many political decision makers worldwide, in view of the increasing energy demand and our dwindling resources. The Fusion Expo is certainly one of the best ways of informing the interested public factually and impartially – may it be a big success, also at its present location here at the International Atomic Energy Agency in Vienna!

Thank you for your attention.

LITTLE NOTE OF GOOD-BYE FROM THE EDITOR

Christa Basaldella, ITER Office Vienna,

Retiring at the end of this year, I don’t want to leave without saying a cheerful good-bye to the ITER Newsletter readership. Cheerful, because though I will miss many people and many tasks, I nevertheless feel exactly as happy and excited as I was as a schoolchild, shortly before the start of the long summer vacation.

From ITER Newsletter Vol. 1, No. 1 (September 1988) until now I have been working at the ITER Office Vienna, through all the smooth and the not-so-smooth ITER phases – CDA, EDA, CTA, ITA – with sometimes quickly vanishing, sometimes more durable bosses (Paul Haubenreich, Alexander Mavrin, Nikolai Pozniakov, Boris Kouvchinnikov). Indeed, since 2003, after the retirement of the “very durable” Boris Kouvchinnikov, I have been the sole staff member in the ITER Office, and it is during this period that I have come to look upon the Newsletter as “my baby”.

I am happy that, before my retirement, I was still in a position to witness the signing of the agreement to establish the International Organization that will implement the ITER fusion energy project and that I am still in time to prepare a Special Issue of the ITER Newsletter, covering the big

event. The signature took place on 21 November 2006 at a ceremony at the Elysée Palace in Paris and was hosted by the President of the French Republic, Mr. Jacques Chirac and by the President of the European Commission, Mr. José Manuel Durão Barroso.

And now I would like to extend my best wishes for success to all the people concerned with the construction of ITER, and to my successor at the ITER Office. Finally, a heartfelt 'thank you' to the Contact Persons of each ITER Party, who have been my editorial board, to the colleagues of the IAEA Publishing Section and Printshop, and, last but not least, to the IAEA, which has been financing the ITER Newsletter for all these years.

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