

KAZAKHSTAN WELDING PROJECT

Kazakhstan Institute of Welding Kazakhstan Welding Association "KazWeld"



INITIATED BY TOTAL

OTAL COMMITMENT



COMMITTED TO BETTER ENERGY









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ABOUT KAZAKHSTAN





- 2,727,300 km² (9th largest in the world, largest landlocked)
- Population: 17.9 mln. people
- Independence from former Soviet Union in 1991
- Capital: Astana (since 1997)
- more than 131 ethnicities
- · Energy is the leading economic sector
- Kazakhstan has the 2nd largest uranium, chromium, lead, and zinc reserves, the 3rd largest

manganese reserves, the 5th largest copper reserves, and ranks in the top 10 for coal, iron, and gold. Currently has the 11th largest proven reserves of both oil and natural gas.

Republic of Kazakhstan President: Nursultan Nazarbayev GDP (nominal): \$264.8 bln **GDP per capita:** \$ 15,219 Currency: tenge (Kazakh tenge)

Today the Republic of Kazakhstan is a sovereign dynamically developing state one of the important players on the global geopolitical space.

The pristine beauty and abundant natural resources of this vast country are not only valuable assets of the independent Republic and its hard-working people, but also a pledge for its great future.

Since ancient times the Kazakh people have been especially close to nature. Being nomads, the Kazakhs have wisely adapted their lifestyle and culture to the severe conditions of living in the diverse reaches of the Steppe.

The nature of Kazakhstan is beautiful and diverse; one can find the severe Siberia and sultry Asia, mountain taiga and deserts, vast

lowlands and massive mountain ridges. The location of Kazakhstan in the centre of the Eurasian Continent very far from the oceans has resulted in a rather severe continental climate.

A great number of mountain glaciers give rise to the majority of the rivers of Kazakhstan: three large rivers - the Irtysh, Tobol and Ishim flow into the Arctic Ocean, the other rivers run into inland water reservoirs such as the Caspian Sea, Aral Sea and Lake Balkhash, or just simply disappear into the steppe or desert.

Many astonishing corners of nature have remained in a primordial form being the witnesses of the ancient history of our planet.

It can be said without exaggeration that Kazakhstan is an open-air museum of the centuries-old history.







KAZAKHSTAN WELDING PROJECT



Dear colleagues, partners, and friends,

n behalf of Total let me express my sincere congratulations on the successful implementation of the Kazakhstan Welding Project.

Truly unique, the Kazakhstan Welding Project has made remarkable progress since December 2009, when I made a proposal to President Nazarbayev during the 22nd Plenary Session of the Foreign Investors' Council (FIC) to assist in developing this project in the Republic of Kazakhstan.

In July 2011, the Republic of Kazakhstan officially joined the International Institute of Welding (IIW) as its 55th country member. In conjunction with this, an independent Kazakhstan Welding Association "KazWeld" has been created to become the Kazakhstan Authorized Body which certifies the international qualification of welders and the compliance of training centers to IIW standards. The Kazakhstan Institute of Welding has been established on the premises of Karaganda State Technical University (KSTU).

Today 35 industry-leading companies and institutions have already joined KazWeld association, including KazMunayGas, Tengizchevroil, North Caspian Operating Company, Karachaganak Operating Company, Total E&P Kazakhstan, Ersai, Kazakhstan Temir Zholy, ArselorMittal Steel Temirtau, Imstalkon, KSTU, and many others. The countrywide number of certified training centers has second (2015-2019) phases of the State Industrialization and Innovation Development Program, there are increasing reached 10 and continues to grow. Hundreds of Kazakhstani welders have so far been trained for different international efforts to attract foreign investors and implement joint categories. As a result of cooperation with the French Institut projects. In particular there are plans for the development de Soudure, the first group of the highest level specialists, of the next stages of key projects in the sectors of Oil & International Welding Engineers, graduated from KSTU in Gas, Construction, and Infrastructure Development. All this 2013. With growing recognition of Kazakhstan among IIW cannot be accomplished without a highly skilled and well members and structures and solid plans to continue to educated workforce. improve industrial standards and train welding inspectors For Total, currently one of the country's major investors with and technologists, we believe that the Kazakhstan Welding over \$10 billion invested into the Kazakhstan economy, all Project is on an excellent path and will continue to flourish. these factors gave a perfect reason to support Kazakhstan There are several key factors which made the Kazakhstan in the implementation of the Welding Project. The project Welding Project such a success. forms part of our strong commitment to a true long-term partnership, local content development, and sustainable Firstly, there was a strong political will and personal development in education, innovation, and technology dedication from His Excellency Mr. President Nazarbayev,

transfer. It is also part of Total's strategy to continue the whose long-reaching vision on development of human development of its activities in Kazakhstan. capital and intensive industrialization of Kazakhstan's economy we can witness in the Strategy Kazakhstan - 2050. The success of the Kazakhstan Welding Project also clearly

shows the strong business cooperation between France Secondly, Kazakhstan has a solid educational base in and Kazakhstan and the important role of the Foreign technical disciplines, while KSTU continues to be one of Investors' Council. On behalf of Total, let me express my regional flagships in terms of training specialists for mining sincere gratitude to all those who have contributed to the and machinery building industries. success of the Kazakhstan Welding Project, and I would like Thirdly, there is a strong demand for skilled professionals to wish stability, peace, and prosperity to all Kazakhstani trained in compliance with international standards due to people for years to come.

continuous increase in industrial activities in Kazakhstan. With the implementation of the first (2010-2014) and

President, Total Upstream Member of the Foreign Investors' Council chaired by the President of the Republic of Kazakhstan Co-chairman of the Kazakh-French Business Council



Yves-Louis Darricarrere





Magzum Mirzagaliyev Vice-Minister of Energy of the Republic of Kazakhstan



Yessengazy Imangaliyev Vice-Minister of Education and Science of the Republic of Kazakhstan

he successful implementation of the Kazakhstan Welding Project is an excellent example of the practical implementation of tasks set by the Head of the State to develop highly qualified technical staff, increase local content in manpower, introduce advanced international standards, perform practical transfer of technologies and innovations, and application of the public-private partnership mechanisms.

It should be noted that there is a big demand for highly gualified personnel in the Energy Industry of the Republic of Kazakhstan, including demand for welders with various qualification levels. As a part of the largest industrial projects implementation - such as construction of new facilities, reconstruction and expansion of technological facilities, refineries, construction and maintenance of oil and gas pipelines, as well as due to introduction of new technologies and sophisticated composite materials, it is required to perform a great scope of the highest complexity welding operations. According to the expert estimates, over the next five years the TCO Expansion Project only will require up to 5000 qualified welders of different categories.

In addition to the training of welders we are carrying out an important work on implementation of the advanced international industrial standards as to the welding operations and welding technologies, certification of companies, training centers for compliance with ISO, EN, ASME in the Republic of Kazakhstan. This will allow local companies to reach a new level of industrial safety and to ensure high efficiency and quality of their operations and products.

In this regard, we should mention the timeliness and importance of the initiative of Total which has been well recognized by the largest energy companies of

Kazakhstan and subsequently received highest appraisal by the Head of the State. As part of this Project, during past two years local and international companies subsoil users have already invested millions in training of Kazakhstani international welders of various qualification levels - from a worker to an engineer, and the demand for such qualified professionals continues to grow each year.

On behalf of the Ministry of Energy of the Republic of Kazakhstan I would like to congratulate all the participants of the Kazakhstan Welding Project with the successful implementation of the initial phase and wish a continuous successful development of the Project in the future. I am confident that this Project will significantly contribute to the competitiveness improvement of the local workforce, and it will be an important element in the implementation of tasks which the Energy Industry of the Republic of Kazakhstan is set to achieve.

n light of the new economic policy "Nurly Zhol", recently declared by the Head of the State and representing a major scale development program, the new economic policy of Kazakhstan will be aimed on development of

It should be noted that the world best practices transport, energy and industrial infrastructure. implemented in Kazakhstan Welding Project have This context raises significance of the inter-industrial allowed the promptest transfer to the new system of cooperation in human resources development. An vocational education and training consistent with the accurate forecast of the required workforce for the current and future requirements of the economy of above mentioned industries should become a point of the country. This will ensure a high competitiveness of reference for the system of vocational education and Kazakhstan welding specialists on regional and global training. Workforce training process should be precisely labor markets, foster public employment and eventually targeted and with the highest guality possible. significantly contribute to the main goal of Strategy As noted by the President Nursultan Abishevich "Kazakhstan-2050" achievement which is the welfare Nazarbayev: "In view of new external risks for the improvement of the people of Kazakhstan.

economy development we need new initiatives to Kazakhstan Welding Project being implemented in line stimulate business activities and employment". This with the message of the Head of the State represents a should become the foundation for the human resources bright example of a successful integration into the world development and educational policy. educational community, implementation of the best With the view of building the Society of Unanimous level specialists training.

international standards and technologies of international Labor the young people receive a unique chance for selffulfillment and getting involved in the economic and By all means, this is the first order priority for the current work activities through implementation of the Strategy economic development of the Republic of Kazakhstan, of Kazakhstan Development until 2050, and the State because it is indeed the quality of higher, technical and Program of Industrial and Innovative Development for vocational education and training which determines the 2015-2019. long term competitiveness of the country in the context The Government of the Republic of Kazakhstan actively of globalization.

works on the vocational education system improvement and making it consistent with the international standards and requirements. For this purpose Kazakhstan continuously improves legislation in the field of education, successfully implements the State Program of Education Development for 2011-2020. The Government has approved the Roadmap for Implementation of Dual Education. The budget funds are allocated annually for

the needs of technical and vocational education and training. The educational holding company Kasipkor was established to develop an international level network of colleges in partnership with business community and world leading educational institutions, eventually the vocational education and training will be guaranteed for all who wish to receive it.

Vocational education and training is the foundation for human resources development for the needs of the Industrial and Innovative Development Program of the country. According to the labor authorities, up to 20 thousand jobs remain vacant in Kazakhstan every year, which require workers with vocational education and training background. In the nearest future the demand for high qualification personnel will grow due to transition to the building of an innovative and technology-intensive economy.

Kazakhstan Welding Project, initiated by French oil company Total, fully corresponds to the objectives and targets of vocational education and training development, outlined by the Head of the State. Efficient cooperation with the employers will enable provision of highly qualified personnel for the core industries of the economy.



TOTAL **IN KAZAKHSTAN**





Brendan McMahon

Managing Director Total E&P Kazakhstan Governing Board member, Kazakhstan Foreign Investors' Council Association

Total is an international energy company, with about 100 thousand employees working in more than 130 countries worldwide. Along with its subsidiaries and affiliates Total is currently the 5th largest oil & gas company in the world.

Total's major activities include oil & gas exploration and development, production (including energy production), transport, processing, sale of crude oil and petroleum products. Total is also one of the leading companies in chemical industry.

Total is present in Kazakhstan since 1993 and is one of the main participants of Production Sharing Agreement for the North-Caspian project (16.81% interest in the Kashagan project).

Total also has a 51.1% interest in two exploration blocks - "North" and "South", which cover an area of approximately 14.5 thousand square km to the south of Aktobe region. As operator, Total completed a large seismic survey in 2013 and is drilling two exploration wells in 2015.

Total is also actively exploring opportunities to expand its activities in RoK and invest in potential new exploration projects in cooperation with KazMunayGas NC.

Mr. Darricarrere, President of Total Upstream, President of Total Gas & Power, is a member of the Foreign Investors' Council chaired by the President of Kazakhstan and he is also cochairman of the Kazakh-French Business Council (KFBC was established in 2008 by the initiative of the Presidents of Kazakhstan and France).

Regarding educational and research initiatives, Total has established strong relations with Nazarbayev University, Academy of Public Administration, KBTU, KSTU, Miras School. The scope of cooperation includes scholarships, internships, international graduate programs, Total professorship association assistance, PhD



programs, and scientific research trainings in France for Kazakhstani scientists.

The key social responsibility, innovation and local content projects of Total in Kazakhstan are:

- the Kazakhstan Welding Project, which has achieved outstanding results in terms of Kazakhstan becoming a full member of the International Institute of Welding (IIW), training of International level welders and welding engineers, certification of local training centers, industrial facilities and companies, and technical personnel in accordance with international standards in welding. The project has received the appreciation of the RoK President Nursultan Nazarbayev, RoK Government, and international welding society at IIW.
- The C7 Solar demo project which is based on the latest and yet unmatched C7 technology developed by Total's subsidiary company SunPower. The project is being implemented in cooperation with Nazarbayev University Research and Innovation System, RoK Ministry of Energy, and its success may open up the possibility to implement larger-scale projects.

Total continues to strengthen its strategic partnership with the Republic of Kazakhstan, supports sustainable development while maintaining the highest industry standards and business ethics. Moreover, being a long-term strategic investor and partner in the Republic of Kazakhstan, Total significantly contributes to the development of the local content, implementation of joint scientific research and technological studies, development of "green" energy, training of highly qualified Kazakhstani scientists and personnel.





INTERNATIONAL INSTITUTE **OF WELDING**



hough the project had been initiated in 2009, for me the story began in March 2011 when I was invited to attend the constitutive meeting of Kazakhstan Welding Association "KazWeld". Each new country joining the International Institute of Welding (IIW) brings a lot of new opportunities to enrich our network both in terms of a human and professional point of view. In this regard Kazakhstan was one of the most outstanding experiences. I wanted to thank everyone organized for the first time in Kazakhstan, etc. who have actively participated in the implementation of this project, including Total E&P Kazakhstan staff, experts from Institut de Soudure, local organizations and majors.

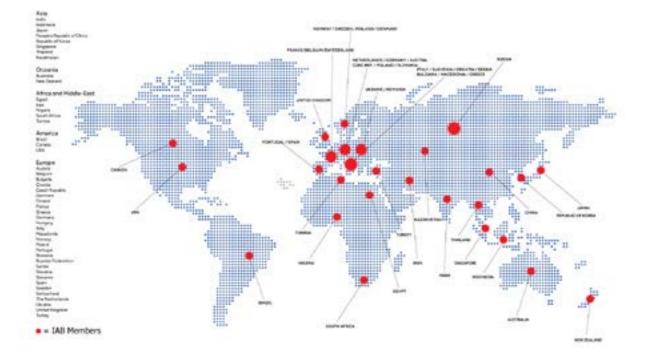
during implementation of this project, which is truly the spirit of the IIW. We have now a fully established member country with two representatives (Kazakhstan Welding Association "KazWeld" and Karaganda State Technical University) and a lot of perspectives still open: the full authorisation of delivery of all IIW diplomas, the possibility for experts and scientists to participate in technical working groups and in the management of IIW, a potential future congress or annual assembly It is a pleasure to see that the Kazakhstan model – which involved a combination of local resources management In addition, it is very important to note the valuable and support by an international company, has proved to be very successful. I sincerely hope that Kazakhstan will become the focal point of IIW in Central Asia. We will definitely recommend the successful Kazakhstan experience to be used by potential new member countries, who want to join IIW.

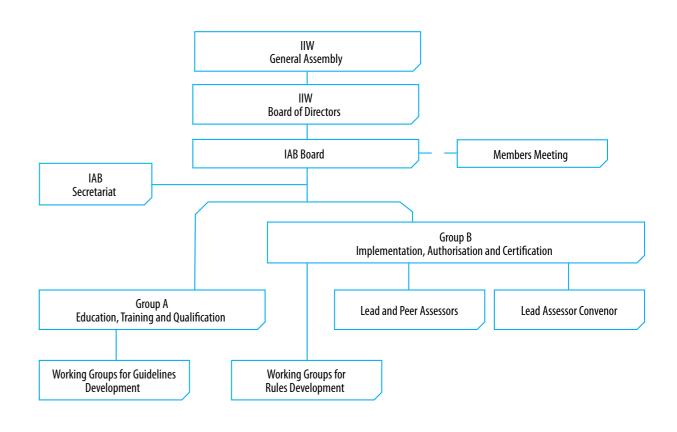
support of relevant governmental authorities which contributed a lot to the most rapid acceptation of IIW Membership and then implementation of the IIW system of diplomas - altogether in less than two years. I personally appreciate the way in which Kazakhstan national specificities and culture have been preserved





Rute FERRAZ IAB Chief Executive Officer, IAB Lead Assessor





Kazakhstan Welding Association-KAZWELD in the International Authorisation Board – IAB of IIW

azweld - Kazakhstan Welding Association became a member of IAB in May 2011. KazWeld in July 2012 became an Authorized National Body – ANB, and reached very high professional level, mainly due to close cooperation with the Institut de Soudure and a continuous and committed support from Total E&P Kazakhstan.

KazWeld started its operations by implementing the International Welder-IW and International Welding Practitioner-IWP courses. The Professional Training Center located at ERSAI base in Kuryk, Mangistau region was the first to receive the status of the Authorized Training Body.

KazWeld association performs independent evaluation of welders' qualification in accordance with the international standards, and also performs audit and accreditation of training centers and awards them with the ATB status.

Main tasks of the KazWeld association are: promotion of the international welding standards; harmonization of

the international and national vocational education and training systems; independent attestation of personnel qualification and training centers certification. Over the last three years KazWeld association has significantly increased the number of its members from 10 to 35, which include leading industry players, professional training centers, and higher education institutes. In parallel the International Welding Engineer – IWE study program implementation has been started in partnership with the Karaganda State Technical University and the French Institute of Welding.

The first IWE course started in 2013 and 22 Kazakhstani specialists have successfully graduated the course. The training was performed at a very high quality level and in full accordance with IIW rules and requirements. In March of 2014 the second group of 18 people representing very different industries has started IWE course. During the surveillance audit of KazWeld done in May of 2014 I had a chance to visit these courses and personally talk with the students, which made a very positive impression on me.

I am pleased to note that Karaganda State Technical to offer this service to organizations using welding as a University and Kazakhstan Welding Institute have very good manufacturing process and willing to ensure the quality of facilities and staff, totally complying with the requirements their products and compete worldwide! asked for the implementation of the IWE.

As well and because KazWeld is an association with a As well the number of ATBs is increasing, there are 10 ATBs strategic vision it also applied to become an Observer Member of the European Welding Federation (EWF). EWF approved in accordance with international standards, and which are allocated in different regions of the Republic of membership will ensure access to the EWF Education, Kazakhstan. Since 2012 KazWeld association has issued Training, Qualification and Certification System. This way more than 200 IIW diplomas. KazWeld can provide the Kazakhstan organizations and people with qualifications and certifications that will allow I am sure that the success of the Kazakhstan Welding them to also consider the European markets. Project will have a very positive effect on the employment

I should mention that KazWeld staff is very competent, rates, improvement of the professional level of Kazakhstani workforce, competitiveness increase of the public and committed and always open to do more and more! Clearly private companies which have adopted and supported their commitment, the continuous support from Total E&P KazWeld and IIW standards and principles. Kazakhstan and involvement of the Institut de Soudure have been the key elements to the success of this team In September of 2014, KazWeld decided to apply for the which is small in number of staff but very big in their work!

IIW Personnel Certification System and to the Companies Certification System according to ISO 3834. This is a very good and important step forward from KazWeld to be able

IIW-IAB ORGANIZATIONAL CHART



Michel Rousseau Fellow of Institut de Soudure Patrick Lantigner

Technical Expert

n early 2010, after Total made a proposal to assist in developing of the «Kazakhstan Welding Project» in the Republic of Kazakhstan (RoK), the two of us, namely Michel Rousseau, an Institut de Soudure expert and Chief Executive of the French Association of Welding, and Patrick Lantigner, a Technical Expert having 40 years experience in the Oil and Gas industry, among which 20 years in Central Asia (mainly in Kazakhstan), have joined our experiences and competences to set up and coordinate the project.

The task was not easy, when one knows that it takes usually about 3 or 4 years to prepare and to submit successfully an admission dossier to the International Institute of Welding (IIW) with the objective of Kazakhstan becoming the 55th official member of this important organization.

Will we be able to find all the necessary financial resources? Will the Industry, relevant state bodies, national holdings be receptive to the project? Will the authorities be actively supporting the project and assist us? That were some of the questions, doubts and interrogations everybody had in mind at the start of this very challenging and unique project.

Finally, thanks to the strong support at the highest level of the RoK Government, thanks to Total's financial and

human resources assistance and thanks to the French Institut de Soudure for its international expertise in welding technology and training, the Project started quite smoothly and a lot of progress could be accomplished in a short time.

Among few important steps, we can mention:

- The welding association "KazWeld" was created and its status were established in conformity with the Kazakh legislation and the requirements of the IIW.
- Karaganda State Technical University (KSTU), one of the most prestigious universities in the country, was selected to be with KazWeld, the representative of Kazakhstan at the IIW.
- Preparation of the dossier of candidature for membership and submission to the board of IIW.
- Drafting the procedures, the Quality manual and the preparation of a dossier for KazWeld to become an "Authorized National Body" (ANB); This ANB, after being fully accredited by the IIW, had the tasks to certify Welding training centers within the country and to be the national entity for delivery of welding diplomas and certificates according to international standards.
- Two and half years after getting its full authorized status, KazWeld initiated 10 recognized welding

training centers and was supported by 35 members, With the support of the Authorities, of its members representatives of a wide range of industrial sectors. and founders (Ministries of Education, Oil and Gas Today, hundreds of welders have been certified at and Industry, Total, ERSAI), and relevant state bodies (KazEnergy, Contractual Agency, etc.) we are confident various qualification levels and for the last 2 years, a Welding Engineer courses has been put in place at that this new step will be also successfully implemented. KSTU. By the end of 2014 40 people have graduated This certification scheme will assure companies' from this course with an International Welding compliance with ISO 3834 standards, will increase Engineer diploma (IWE). the level and guality of the welded products and will introduce advanced technological welding processes for Today, a new challenge is waiting KazWeld and the the benefit of the country and Kazakhstani people.

Today, a new challenge is waiting KazWeld and the supporting Project team: KazWeld has applied to the International Authorization Board (IAB) of the IIW to become Authorized National Body for Company Certification (ANBCC) with the authority to introduce the system of international certification of welding industries in the RoK.









KAZAKHSTAN INSTITUTE OF WELDING





KAZAKHSTAN INSTITUTE OF WELDING







Arstan GAZALIEV

Rector of Karaganda state technical university, Academician of Republic of Kazakhstan National Academy of Science

Dear reader!

he adjustment of education system in order to provide modern production industry with the staff of new formation becomes increasingly important within the complex of measures on development of the human resources: "We need to meet the demand for engineering and technical personnel with international qualification. This should be done together with the business ", - said the Head of the State Mr. Nazarbayev during the 26th Session of the Foreign Investors' Council on May 22, 2013. One of the activities of the international company Total was highlighted by Nursultan Nazarbayev as an example of a successful educational project with participation of one of the world economy leading companies. He drew attention of the foreign investors to the fact that, with the assistance of this oil giant "... the Kazakhstan Welding Institute has been established. The Institute will provide training of the Kazakhstani welding specialists, increase of their qualification level in accordance with international standards and requirements of the International Institute of Welding".

Today we can witness the actual results of cooperation on training of highly competitive international level engineers between Total, ERSAI, French Institute of Welding, and Kazakhstan Welding Association "KazWeld" with one of the leading technical universities in Kazakhstan -Karaganda State Technical University.

More than 60 welding specialists have already graduated from the Kazakhstan Institute of Welding at KSTU and obtained diplomas in "International Welder", "International Welding Practitioner" and "International Welding Engineer, IWE" training programs recognized in 57 countries around the world. A key event was graduation of the first group of the Kazakhstani specialists under the program "International Welding Engineer IWE". Training of welding engineers on the basis of international standards has great importance for the innovative development of the Kazakhstan industry : these high level specialists are in very big demand basically across all industries.

It is exactly this type of projects which allows us to implement advanced industrial and professional standards, ensure high level of industrial safety, increase the local content in international projects, improve the competitiveness and professional level of Kazakhstani specialists, and meet the growing demand of the economy for highly qualified professionals.

Implementation of this project is directly linked to implementation of the strategic objectives set by the Head of the State Nursultan Nazarbayev on the social and economic modernization of Kazakhstan. I wish only success to all participants of this project!



Igor BARTENEV

Director of Kazakhstan Welding Institute at Karaganda state technical university

araganda State Technical University has great experience of the fruitful collaboration with the French company Total. Thanks to this company's initiative the Kazakhstan Institute of Welding was established at KSTU on the basis of the training center "Svarka" in 2010.

Kazakhstan Institute of Welding successfully completed international accreditation in 2012 and conducted the "International Welding Engineer" training courses for the first time in Kazakhstan in 2013. The IWE course lectures had been conducted by instructors of the French Welding Institute (Institut de Soudure), Jean-Paul Hugbart, Pascal Vuylsteke and Jean-Paul Gaudin and the practical workshops were taught by instructors of KSTU M. Akhmetbekov, V.Bochenin and N. Zhuravlev. The graduation ceremony of the first group of 22 international welding engineers representing companies from all over Kazakhstan was held in November of 2013 with participation of Mr. Brendan McMahon, Managing Director of Total E&P Kazakhstan, Mrs. Galiya Kurmangaliyeva, Government Relations manager, Total E&P Kazakhstan, and French experts Michel Rousseau and Patrick Lantigner who actively participated in implementation of the Kazakhstan Welding Project.

The "International Welding Engineer" course was continued in 2014, and all lectures and practical workshops were conducted by instructors of the Kazakhstan Institute of Welding. Experts from the French Institute of Welding gave a very high appraisal of the training process quality. In November of 2014 another 18 Kazakhstani welding specialists have successfully passed 4 exams and obtained International Welding Engineer diplomas.

As a participant of this big Kazakh-French Project I would like to express my deep gratitude to the French company Total and the French Institute of Welding for their significant contribution to the training of highly qualified welding specialists in Kazakhstan.

In the future, as we can see from the results of 2014, Kazakhstan Institute of Welding can carry out the training of specialists based on the International Institute of Welding programs. And the business cooperation of Kazakhstan and France welding institutes in educational and industrial areas shall be continued.

INTERRELATION BETWEEN KAZAKHSTAN WELDING PROJECT AND **INTERNATIONAL STRUCTURES**



Kairat SHEKTYBAEV graduate IWE 2013

y name is Kairat Shektybaev. I am a graduate from the international course on "International Welding Engineer" of 2013.

I would like to express my sincere gratitude to the Kazakhstan Association of Welding «KazWeld», the Government of the Republic of Kazakhstan, all ministries and departments of the Republic of Kazakhstan for their work on the Kazakhstan becoming a member of the International Institute of Welding (IIW). Also I would like to express my deep appreciation for the excellent organization of the international course on "International Welding Engineer." Joining the International Institute of Welding is a great achievement for Kazakhstan. Kazakhstan's membership in the IIW offers great opportunities to develop the technical personnel in the welding industry. I am glad that Kazakhstan has demonstrated the dynamic industrial and innovative development.

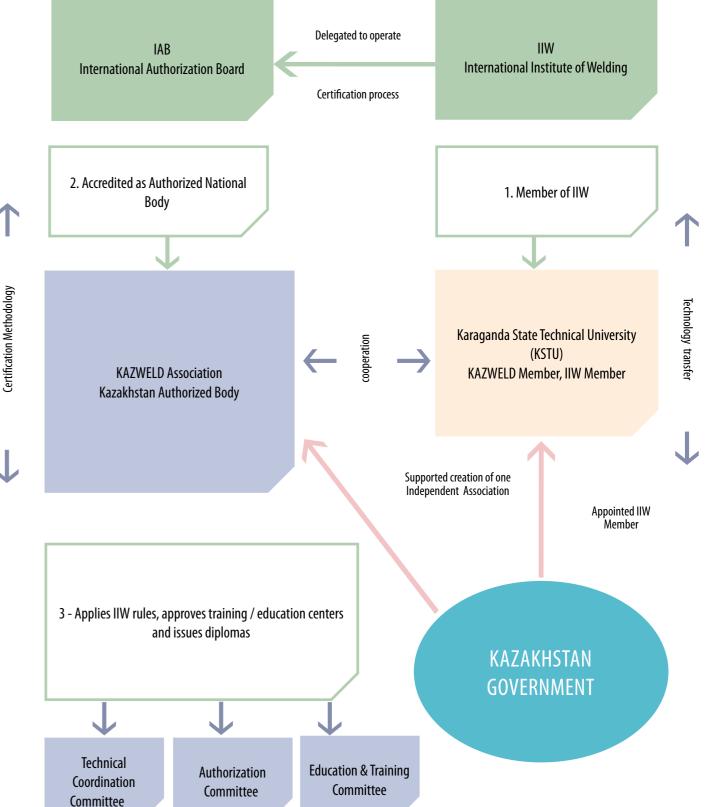
The "International Welding Engineer" training program is a major step to the professional success and professional development. The course of "International Welding Engineer" has a good balance of the theory and practice, which is very important in order to understand all aspects of the welding process. During these courses I've learned a lot about the welding process, obtained all theoretical and practical skills as per the international standards, which are necessary for gualified welding engineers and which I successfully use in my work today.

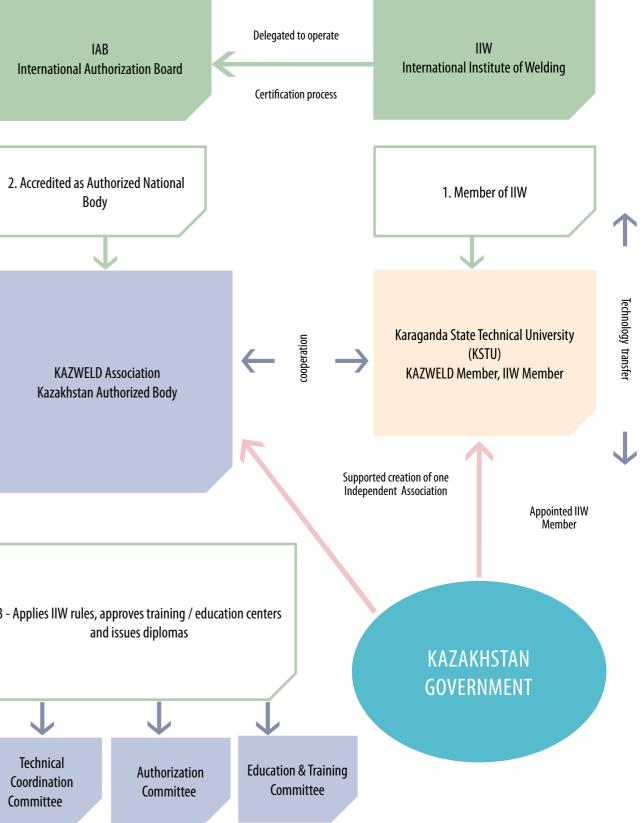
With completion of the "International Welding Engineer" course I've improved my professional skills and now can achieve much better results.

I believe that this international course is very attractive and in high demand, and it is really worth to attend it because the competent teachers with great professional experience give and explain very valuable and useful information during this course.

I'm glad that this course was very interesting and beneficial, I wish all future applicants and graduates of this course to successfully qualify, pass exams and obtain the qualification of "International Welding Engineer"!









KAZAKHSTAN WELDING ASSOCIATION «KAZWELD»



Zhandos ABISHEV

Chairman of Board of Directors of the Kazakhstan Welding Association "KazWeld" Director of the Mining and Metallurgical Assets Management of Sovereign Wealth Fund "Samruk Kazyna" JSC

KAZAKHSTAN WELDING ASSOCIATION «KAZWELD»

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he enforced industrial and innovative development of the Republic of Kazakhstan, structural reorganization and emergence of new industries, development of industrial facilities, and implementation of investment projects have brought up the challenges and tasks that required adequate response in many areas, including the training of technical personnel. A big deficit arose in the shortage of the qualified welding personnel starting from welders to engineers. And it was largest local and foreign oil companies that started to draw attention to this problem, and where the lack of qualified welders was experienced quite seriously.

Creation of Kazakhstan Welding Association «KazWeld» and Kazakhstan Institute of Welding has laid the foundation to the training of highly qualified welding personnel who meet all the latest requirements and work in accordance with international standards. It is no longer needed to travel for study abroad in order to get International Diploma in Welding; now the International diploma can be obtained in the Republic of Kazakhstan from the Kazakhstan Institute of Welding or from one of the ten Authorized Training Bodies, accredited by KazWeld. It is important to emphasize that the International diploma is also recognized in 57 countries members of the International Institute of Welding.

A new impetus to the development of higher education and vocational training in welding was fostered by the signature of the Memorandum of Understanding and Cooperation between the Ministry of Education and Science, Ministry of Energy, Ministry of Investment and Development, and Kazakhstan Welding Association «KazWeld» in May of 2014. With the support of three ministries the Kazakhstan

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 Authorization Committee\Governing Board

 (approval of ATB, issue IIW diploma)

 Committee on technical coordination

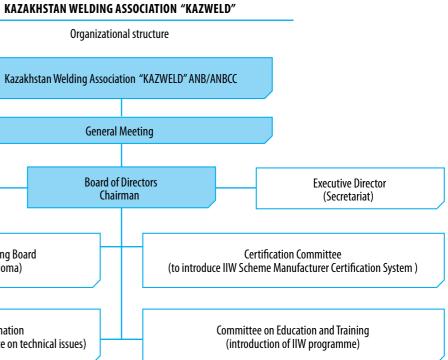
(relationship with Kazakhstan welding institute on technical issues)

Welding Association «KazWeld» has moved to a new stage of development, which allows for more active participation in the modernization of higher education and vocational training system, as well as in the improvement and implementation of the modern and innovative training methods.
in the establishment and development of the Kazakhstan Welding Association «KazWeld» and the Kazakhstan Institute of Welding.
The Kazakhstan Welding Association «KazWeld» enjoys active cooperation with the government sector. National Chamber

of the modern and innovative training methods. cooperation with the government sector, National Chamber Another milestone in the development of the Kazakhstan of Entrepreneurs, Industrial Association «KazEnergy» and Welding Association «KazWeld» was the creation of the the Engineering Union. Also, we are the only independent Technical Committee for Standardization # 82 «Welding body in the country for attestation and assessment of the welding personnel according to the international standards. and related processes» in September of 2013. This allows the Kazakhstan Welding Association «KazWeld» to work The Kazakhstan Welding Association «KazWeld» actively on development of national standards, and participate in participates in the implementation of the State Program interstate and international standardization activities. Thereby of Enforced Industrial and Innovative Development of the the Kazakhstan Welding Association «KazWeld» is actively Republic of Kazakhstan, meeting the growing demand involved in the implementation of the Law "On Technical on skilled professionals for the new and existing industrial Regulation" of the Republic of Kazakhstan, contributing to projects. the development of infrastructure for quality in the area of The Kazakhstan Welding Association «KazWeld» has longweldina.

the development of infrastructure for quality in the area of welding. Within a relatively short period of its development, the Kazakhstan Welding Project has brought an interest from large companies in oil and gas and engineering industries, and key educational institutions specializing in the training of welding personnel. Today 35 leading local and foreign companies and organizations became members of the Kazakhstan Welding Association «KazWeld». The Kazakhstan Welding Association «KazWeld» has long-term perspective plans, which include: increasing of the industrial capacity and competitiveness of the leading sectors of the economy; improving the quality and increasing the number of certified institutes and training centers covering all major regions of the country; transfer of advanced technologies and conducting joint researches in the area of welding.

Kazakhstan Welding Association «KazWeld». A strong support to the project development was provided by our foreign partners in the form of sponsorship - North Caspian Operating Company, Karachaganak Petroleum Operating company, Tengizchevroil, MaxPetroleum \ Samek International. And I would like to especially emphasize the significant and continuous contribution made by the French oil and gas company Total and the French Institute of Welding





Rustambek Abdurakhmanov

Executive director of KazWeld Association Doctor of Sciences, Professor, Academician of the National Academy of Natural Sciences of the Republic of Kazakhstan

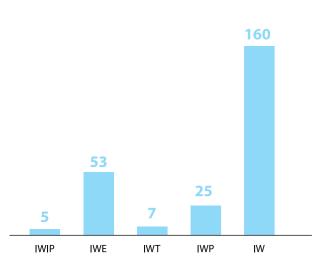
elding as a technological process that joins materials is widespread in various industries. It is hard to imagine an industry where welding is not applied. Welding is used even where its usage would seem to be impossible, for example in medicine ultrasonic welding of the bones and other body tissues. Currently welding is used to join both metallic and non-metallic construction materials. Various synthetic materials, such as plastics, as well as natural ones, rocks for example, are also being welded. Welding is carried out by melting of the edges of the connected parts not only at high temperature but also at room temperature, i.e. using so-called cold welding methods. Welding is possible in air, vacuum and different gas environment. Products are welded not only on the ground, but also underwater and in space. Underwater welding is used in repairing of the bottoms of ships or repairing of pipelines

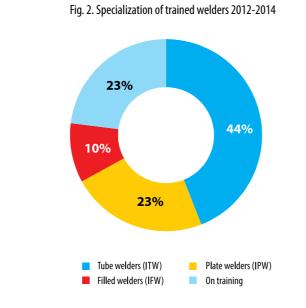
which are laid on the seabed. Repairing of a spacecraft during orbital flight is possible in outer space. The space modules are planned to be build by welding in vacuum. In the near future with the exploration of the planets of the Solar System the welding will be used for the assembly of various structures far beyond the Earth.

At the present time welding is used in industrial and civil engineering, in construction of high-rise buildings and skyscrapers, in laying the oil and gas pipelines, in construction of bridges, tunnels, in construction of subways, in the manufacturing of river, sea and oceanic vessels and submarines, in the manufacturing of aircrafts and helicopters, in construction of spacecrafts and space stations, tactical and strategic weapons, etc.

Widespread usage of welding determines our secure existence and safety of people who operate any kind of equipment. Faulty workmanship of welded joins,

Fig. 1. Number of graduates 2011 - 2014





structures and buildings sometimes lead not only to destruction, but also to tragedy and great losses of lives. One can recall numerous accidents and disasters which happened around the world in the past and nowadays. Multiple destructions of bridge structures and tunnels as well as explosions of gas and oil pipelines happened because of defects in welds and welding joints. welding workers from workers to engineers becomes the matter of a great national importance. Due to the lack of qualified personnel in our country many foreign companies still invite qualified welders from abroad to carry out welding work in the oil and gas, building construction, engineering industries, etc.

Poor execution of welding tasks happens because of violation of technological regulations, failure in complying with standards, usage of poor quality welding materials, faulty welding equipment as well as lack of qualified personnel, including welders. In this regard, education and training of the whole range of qualified





Nazarbayev and the Government of the Republic of Kazakhstan. Then by the order of the Head of the State the project implementation was set under responsibility of the Ministry of Education and Science and the Ministry of Oil and Gas (currently the Ministry of Energy).

In the course of the project implementation the Kazakhstan Institute of Welding was created on the base of the Department of Welding Production at the Karaganda State Technical University in October 2010. The Kazakhstan Welding Association «KazWeld» was established as an independent body for assessment, qualification and certification of welding personnel in March 2011. Currently 35 local and foreign companies as well as national educational institutions are the members of the Association.

Following the successful International audit, at the 65th General Assembly of the International Institute of Welding (IIW) Kazakhstan Welding Association «KazWeld» has received a full accreditation with the right to authorize training centers, to carry out the examinations and to certify welding personnel in accordance with international standards as well as to issue IIW diplomas in July of 2012.

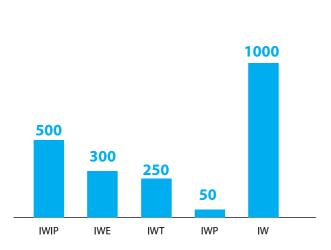
At the present time there are 10 Approved Training Bodies (ATB) in the 6 cities across the country. The Kazakhstan Institute of Welding has trained 53 International Welding Engineers (IWE), including ones under transitional process; the ATBs trained 5 International Welding Inspectors (IWIP), 7 International Welding Technologists (IWT), 25 International Practitioners (welding instructors) (IWP) and more than 160 International Tube, Plate and Filled Welders (IW) (see Figure 1 and Figure 2).

In near future there are plans to continue the training of the International Welding Technologists (IWT), mid-level specialists in welding, as well as International Welding Inspectors (IWIP). The capacity of the approved training centers is much higher and allows increasing by 3 - 4 times the number of highly qualified specialists (see Figure 3).

One of the tasks of the Kazakhstan Welding Association «KazWeld» is to increase the quality and competitiveness of the welding production in the Republic of Kazakhstan. This task cannot be achieved only by improving the quality of training program for the welding personnel. It is also necessary to improve the level and guality of the welding production, to equip welding stations and workshops with the modern equipment, to implement advanced technological welding processes, to raise the requirements for the implementation of manufacturing instructions and procedures, to strengthen the control over the welding coordination, to introduce a certification system of welding personnel.

Nowadays the system of international certification of welding production complying with ISO 3834 are widely used in many developed countries. The ISO 3834 specifies the requirements for a quality performance of fusion welding of metallic materials, including the requirements for welding personnel, welding inspectors, equipment,





welding and related activities, welding materials, storage of basic materials, heat treatment after welding, inspection and tests, discrepancies and corrective actions; calibration and validation of measuring, testing and control of equipment; identification and traceability; reports and quality.

In the nearest future it is planned to introduce the national standards ST RK ISO 15609, ST RK ISO 15613, 17660 ST RK ISO, ST RK EN 15085 ST RK and other standards which cover technical requirements and certification of welding procedures for metallic materials as well as manufacturing companies assessment, performed by the authorized body under ISO 3834 procedures.

Taking into account the importance of this issue, the Kazakhstan Welding Association «KazWeld» has applied to the International Authorization Board (IAB) of the International Institute of Welding (IIW) to acquire the authority to introduce the Manufacturer Certification System in Welding in the Republic of Kazakhstan. At the 67th General Assembly of the IIW which was held on July 13-18, 2014 in Seoul (South Korea), Kazakhstan received the status of ANBCC Applicant (Authorized National Body for Company Certification), and in November of 2014 - the preliminary authorization to assess the manufacturers in compliance with ISO 3834.

The obtaining of the full authorization which is scheduled for the year of 2015 will allow to perform the important national task of manufacturers' certification to be done by domestic experts without involvement of foreign certification bodies.

In November of 2014 the Kazakhstan Welding Association «Kazweld» expanded the scope of its activities by getting the preliminary authorization of the IAB of the IIW for certification of welding personnel who are in charge of welding coordination in compliance with ISO 14731. Now the Certified International Welding Engineers (CIWE) do not need to travel abroad every three years to confirm their qualifications.



On November 18, 2014 at the General Assembly of Understanding and Cooperation was signed between the European Welding Federation (EWF) KazWeld was the Ministry of Education and Science, the Ministry of granted the "Observer" status which gives a right to Oil and Gas (now is a part of the Ministry of Energy), the Ministry of Industry and New Technologies (now is certify the welders in compliance with EN 287 (analogue to ISO 9606 and ASME IX). In this regard, numerous joint a part of the Ministry for Investment and Development) ventures will benefit from the KazWeld's services and and the Kazakhstan Welding Association «Kazweld» to certify their welders in Kazakhstan without sending which allows us to move forward together in the them abroad to such countries as Germany, France, preparation of welding engineers in accordance with Spain, Italy etc. At the same time the considerable international standards whose diplomas are recognized financial resources can be saved to ensure highin 57 IIW-member countries around the world. These quality verification of qualification of welders who personnel are in high demand in our country and their are in charge of welding production in the oil and gas, professional work will no doubt be a great contribution railway companies, automotive, mechanical engineering to implementation of the State Program on Enforced companies, companies engaged in industrial and civil Industrial and Innovative Development of the Republic of construction, bridge construction and tunneling, and Kazakhstan, implementation of the Strategy "Kazakhstan - 2050", and helping Kazakhstan to become one of the many other industries.

world top 30 developed countries. Since September of 2013 the Technical Committee TC 82 The Kazakhstan Welding Project is at the initial stage "Welding and related processes" is operated under the of its development and still has a long way to its final Kazakhstan Welding Association «Kazweld». The TC 82 works on development and improvement of the national implementation. The network of training centers should and interstate standards, as well as national standards expand and cover all regions of Kazakhstan. The training in relation to the international, European and other of welding specialists of all levels should be organized. The work on the development of international standards countries standards, and their harmonization. Thereby, the Kazakhstan Welding Association actively participates and technical regulations for welding production in the implementation of the law "On technical should be intensified. Cooperation with the industrial regulation" of the Republic of Kazakhstan contributing sector companies for implementation of advanced to the creation of infrastructure for quality. technological processes in welding and welding equipment should be more active. There are still a lot of The Kazakhstan Welding Association KazWeld regularly new interesting and exciting activities ahead. contacts with IIW and gets information on the latest

international researches and practical developments in the field of welding equipment and technology, and distributes this information to the welding organizations across the country.

In May of 2014 in the framework of the annual general meeting of the KazWeld Association a Memorandum of

AKTAU TRAINING CENTER

Experience of organizing the training programs for welders in accordance with international standards



Myrzagali TULEPOV



ktau Training Center" LLP (hereinafter - ATC) was established in August 2006. The training activities started in June of 2009 once the ATC building had been reconstructed. The founders of ATC are the National Fund "Education Fund of Nursultan Nazarbayev", Akimat of Mangystau Oblast, Kvaerner Caspian Fabrication LLP (previous title - DOS MARINE LLP) constructing fabrication yard in Aktau Seaport, Fund of Stiftelsen Rogaland Kursog Kompetansesenter (RKK) representing colleges and training centers of the Rogaland region, Norway. Thereby ATC represents a unique model of public and private partnership, where local authorities, oil and gas companies and international and Kazakhstani educational institutions take part in.

The training center has been established to train specialists for Oil and Gas Industry in accordance with the international standards. It is an important issue since we expect a significant deficit of the qualified workers for the large oil and gas projects infrastructure development, such as TCO Future Expansion Project and the phase II of Kashagan North Caspian Project.

As per the TCO estimates they will need up to 5000 welders for their project by 2015-2016. The situation will become more difficult when the oil and gas projects will start to compete for the human resources. The only possible solution is to organize in advance the mass training programs and to raise Kazakhstani welders' qualification, which requires organization of a good quality educational programs in compliance with the international standards.

Once we obtained the international level status, the ATC has been developing in the following key directions:

1. <u>Material and Technical Base</u>: Two-storey building of the training center includes 4 welding classrooms with 32 welding stations (i.e. ATC can train simultaneously up to 32 welders), an assembly shop and a machine shop. ATC has modern welding equipment from Sweden and Finland for manual arc welding, argon-arc welding and gas-shielded welding with semi-automatic welding machines.

2. <u>Training instructors</u>: ATC has chosen 6 professional welders / fitters with work experience in international companies, many of them were team leaders and mentors of young workers. The coachers had a 3-month training in Norway. Also, the training instructors had extensive training course in Kazakhstan on training, information technology and international standards related to the welding operations (with involvement of Norwegian experts).

3. <u>Training programs and presentations</u>: ATC training programs are based on the local and international programs and standards (ISO 9606, EN 287, ASME IX). ATC has developed a comprehensive database of training presentations on the basis of the International Institute of Welding (IIW) for training and certification of international welders.

4. <u>Certification as per the Kazakhstan requirements</u>: According to the new ATC industrial safety requirements on certification of welders, members of the ATC Examination Committee successfully passed exams in the Main Authorization Center in Karaganda in 2011. ATC has become an authorized center with the right to certify the welders and welding engineers of levels I and II. 5. Certification in accordance with international for oil and gas companies under the relative training standards: ATC has initiated the development and contracts with Mangistaumunaigas, Karakudukmunai, implementation of personnel certification scheme Tasbulatoyl, Enkalnshat, and about 70 specialists were according to the international standards and ISO 17024 trained for future oil and gas projects under the scheme standard with support of DNV (Det Norske Veritas). In of the Contract Agency of the RoK MOG. In 2013 we 2012, ATC was audited by the International Institute were awarded with new training contracts by oil and gas of Welding (IIW) and Kazakhstan Welding Association companies (Datoba, KazGerMunai, SBL Offshore Services KazWeld and became an Authorized Training Body with and Teniz Burgylau) - 22 welders with international the right to issue International Welder diplomas (IW). diploma. ATC training coachers have received their International Welder - Practitioner diplomas (IWP).

ATC training coachers have received their International Welder - Practitioner diplomas (IWP).
In conclusion, it should be noted that the ATC has successfully achieved its goals – the training center trains and authorizes/certifies Kazakhstani welders in accordance with international standards and achieved recognition by the international oil and gas and oil service companies.
2010.

2010. 7. <u>Recognition of International Companies:</u> ATC prequalified by Agip KCO in 2008, and prequalified by NCOC in 2011 (the operator of the Kashagan North Caspian Project). In 2010, the HSE System of ATC was recognized by Agip KCO as the one complying with the company requirements. However, ATC should continue developing further, both in terms of improving its training services and expanding material and technical base in order to meet the upcoming demand. Starting from 2015 there will be a need for a large number of highly skilled workers for oil and gas infrastructure construction and their qualification shall meet the

8. Training: ATC has trained about 200 specialists in 2009, including 170 welders / fitters as requested by There is a huge gap between the future demand and the state authorities within the Roadmap program. The resources available now. first contracts were executed with the regional oil and Therefore today we need to start the mass training and gas companies (MangistauMunaiGaz, Karakudukmunai) gualification improvement of personnel for the hard-toin 2010 for about 100 welders. In 2011 we were fill specialties and the specialties that require high level awarded with the first training contracts for Kashagan of qualification and a long-term training. International Project (70 isolation workers for Aker Solutions and about 90 welders for KCOI - Rosetti). In 2012 ATC trained more than 300 welders, fitters and slingers

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KAZAKHSTAN WELDING PROJECT: EXPERIENCE AND KEY ACHIEVEMENTS

KAZAKHSTAN WELDING PROJECT

Introduction, sustainability and perspectives



Galiva Kurmangaliyeva Manager for Government Relations and Public Affairs, Welding project coordinator, Total E&P Kazakhstan



his brochure has been prepared with the aim to share our experience of developing and implementing the Kazakhstan welding project.

In this part we will describe the principal issues which were encountered along the way and highlight the key factors which helped the project to succeed.

1. Why the Welding Project in Kazakhstan

Total has been present in Kazakhstan since 1993 and as a strategic investor has set up excellent relations with Kazakhstan authorities and business partners. With strong commitment in such areas as corporate social responsibility, support for sustainable development, and local content development, it has been decided that Total will help Kazakhstan's industry to substantially improve the level of expertise, gualification of workforce, and ultimately find significant synergy for the oil & gas industry and projects that we are developing here.

After extensive research, consultations, and some brainstorming the area of welding was identified as the high potential area. There were a number of reasons for that.

First, welding is present and used extensively virtually everywhere: oil & gas, construction, machinery building, aerospace and even medical equipment and treatment.

Second, even though there was a strong base level of welding industry and training of welders in Kazakhstan still most of the existing industry standards were based on outdated ones inherited from the soviet times, and which didn't meet current international level industry requirements.

Third, the demand for highly qualified welders was very high and was only going to increase. This was very visible especially on the large oil & gas projects like Kashagan, Tengiz, and Karachaganak, where during the initial phases of development a lot of welding personnel was imported from China, Turkey, Egypt, Pakistan, Indonesia, and so on. And the demand for welders during the next phases of just these three project's development was estimated at more than 5,000 welders in 5-year span.

And fourth, Kazakhstan declared a strategic course toward industrial development and modernization, implementation of the latest international standards, modernization of the vocational education and training system.

Though it was not the primary business for Total, but due to the strong connections with the French Institute of Welding (Institut de Soudure) it was decided that implementation of the Kazakhstan Welding Project is a worthy and highly potential idea with many potential synergies, and later this choice has proved to be extremely successful.

2. Welding Project commencement

Total is the proactive member of the Foreign Investors' Council chaired by President of the Republic of Kazakhstan Mr. Nursultan Nazarbayev (FIC). This Council comprises of the key foreign investors such as Total, ExxonMobil, Chevron, ArcelorMittal, and others, as well as the key financial institutions like European Bank for Reconstruction and Development, Asian Development Bank, each one represented by CEO of the company.

FIC holds annual sessions where the foreign investors and Kazakhstan authorities discuss major strategic developments in the key economic sectors and possible ways to improve the investment climate in the Republic

of Kazakhstan. FIC serves as an excellent platform for vision and setting up the step by step plan of the Welding direct dialogue between foreign investors, RoK President, project implementation. and the Government. FIC is also and very often the place From the very beginning the Kazakh authorities have where major projects and developments are announced, set the clear and strong ambitions: as soon as possible especially those that may require considerable support Kazakhstan should implement the project, achieve main from the Kazakh authorities but are intended to bring objectives, and start to deliver feasible results. substantial benefits for both sides.

On December 4th, 2009, on the 22nd Plenary Session of A joint working group was created consisting of the FIC, Mr. Yves-Louis Darricarrere, at that time the President representatives of ministries of Education, Oil & Gas, Total of Total Exploration & Production, has suggested the E&P Kazakhstan (TEPK). Two international experts from implementation of Kazakhstan welding project. The Institut de Soudure were also invited by TEPK. ultimate goal was to support local content policy The working group preformed extensive market analysis development, to train welding specialist in accordance and surveyed the existing Kazakhstan educational to the international standard, to improve qualification of system, compared it with best existing international welding specialists, and to introduce the international practices. standards into the Kazakhstan welding industry.

Initial targets of the Project were identified quickly: The Project received highest appraisal and very warm Kazakhstan should become a member of the International welcome by the President Nazarbayev. By the President's Institute of Welding, introduce international industrial decree the RoK Ministry of Education and Ministry of and educational standards in welding, and start training Oil&Gas together with Total were tasked to develop this of international level of welders in different categories. project in Kazakhstan.

But the following route to proceed was not so obvious. Kazakh authorities also noted high importance of the Even for Total, the major challenge at this initial stage was Welding project in terms of increasing industrial safety, to form the detailed vision of the project and understand reliability, efficiency and quality of complex technological processes, technological and innovative development of the functions of its elements, what will be the optimal structure, what key elements already exist in Kazakhstan, the domestic oil and gas industry. should be upgraded, or created from scratch, and 3. Welding Project development eventually, how to do all of this in the most efficient way

Development of the Kazakhstan Welding Project started in terms of resource allocation. with the series of meetings and consultations, involving Some people were skeptical about this project and if it targeted stakeholders, various ministries, companies, ever comes to live. Some thought that the Kazakhstan state organizations in order to understand the project Institute of Welding should be created and built from scratch. But that would require too much of capital

Some initial steps were quite straightforward.



investments that were not available and would be highly ineffective. Frequent moves and reshuffles in the government bodies which resulted in frequent changes of persons in charge of the project implementation and coordination also contributed to the increased slowness in discussion, decision making, and endorsement process.

It took a lot of efforts, strong dedication, personal commitments, constant and continuous discussions at different levels, strong networking and stakeholder relation management to persuade all the parties involved, make them believe in the project success, and jointly commit towards project implementation. This is what TEPK can be truly proud of and what reflects its actual strength in stakeholders' relation and the high level of acceptability in Kazakhstan.

Eventually Karaganda State Technical University was selected to become the base institution for the Kazakhstan Institute of Welding, given the strong educational base, location in the industrial center of Kazakhstan, gualified staff, high rankings among technical universities. Even the fact that President Nazarbayev graduated from KSTU actually has not influenced the selection as is, but it only supported the high reputation and educational level of this institution. Mr. Igor Bartenev, Head of the Welding Chair at KSTU, became the Director of the Kazakhstan Institute of Welding.

On the other hand, there was a need for a complete independent body, which would be able to perform independent industrial and educational certification and qualification functions. This body was created in a form of the independent Kazakhstan Welding Association. Five founder companies, namely Total E&P Kazakhstan, Machinery Building Plant, Ersai Caspian Contractor, KSTU, Innovation Technology Center, have signed the

Registration Charter of Kazakhstan Welding Association "KazWeld". Newly selected, young but very bright and ambitious Mukhtar Mankeev, has started his duties as the Executive director of KazWeld association.

In 2011 KSTU and KazWeld, the key elements of the Kazakhstan Welding Project, applied and were successfully elected into International Institute of Welding (IIW) and International Authorization Body (IAB) accordingly.

4. Training of welders

From the beginning the idea was to expand the network of certified training centers across all regions of Kazakhstan. By doing so it helps to cover regional demands for qualified welders; significantly reduces the cost of training by eliminating travel and living costs; allows for coverage of all levels of welders' qualifications and specializations. For example, western regions of Kazakhstan have oil & gas as the leading industrial sector, heavy industry is extensively represented in the North-East, and Central regions, light industries and agriculture, as well as major pipeline routes in the South. Each industry requires different type of welding specialists tube, fillet, plate, onshore and offshore, and even sub-sea welding may be required.

Today the 10 certified training centers represent most of the regions of Kazakhstan. Each training center is oriented on training of certain type of welding specialists, with educational programs and facilities certified by KazWeld in accordance with IIW standards.

A major milestone was achieved with the introduction of the training for the highest level of welding specialists - International Welding Engineers. This course was introduced in 2013 at KSTU with the assistance of French

Institut de Soudure, which provided for the full study company certification audit in accordance with ANBCC course program, study materials (which were translated process (certification of Ersai). In the preparation stage and are available in English and in Russian). In 2013 for the audit the group of 85 people attended the the course was taught by the teachers from Institut de seminar on ANBCC audit which was lectured by Mr Soudure, who trained the first group of 22 engineers, as Michel Rousseau from Institut de Soudure, and the well as the group of Kazakhstani teachers, who eventually high potential candidates were identified for positions were certified to teach this course. In 2014 the IWE course of lead assessor, and assessor during the subsequent was taught completely by local KSTU teachers, under professional interviews. Full authorization for ANBCC occasional supervision from Institut de Soudure. process for KazWeld is expected in the beginning of 2015. Today we see a very big demand for these courses both

from specialists and the companies. For example, all 22 Also, in 2014 the Technical Committee #82 was created students from the first group of International Welding under the Ministry of Industry and New Technology Engineers got promotion with substantial salary increase with KazWeld being a secretary and working body of or attractive offers from other companies either during this Committee, which is now working on development or immediately after the courses completion. of the modern industrial standards in welding in Kazakhstan and harmonization of them with the leading Today, KazWeld association together with training

international standards. centers is busy working on the two major tasks:

- · Further expansion of the training centers network, especially in the North and South regions of Kazakhstan;
- · Introduction of educational courses to train international welding technologists and inspectors.

We are especially proud that today Kazakhstan Welding Association "KazWeld" is the only fully operating model in RoK for independent evaluation, certification and gualification system based on the international standards, which corresponds with the task on development and modernization of vocational education training system given by the President Nazarbayev in his Strategy "Kazakhstan – 2050".

5. KazWeld functions and activities development

KazWeld association was created in order to fully meet all the necessary IIW and IAB rules, standards and 6. A special role of the Institut de Soudure requirements. KazWeld is a completely independent, We would not tell the secret, by saying that the Kazakhstan transparent, non-profit industry association, Welding Project would probably never materialize and representing IIW in Kazakhstan, as well as representing achieve its current status without constant support made Kazakhstan in IIW and IAB. KazWeld has the necessary by the French Institute of Welding (Institut de Soudure), structures such as Governing Board/Committee on its director Mr. Pascal Roussel, Dr. Michel Rousseau, authorization, Committee on Company Certification, and consultant and former Total Employee Mr. Patrick Committee on Training and Education. Today, KazWeld Lantigner. consists of 35 members, including such RoK industrial The latter two have worked on the Project since the leaders as KazMunayGas, Kazakhstan Temir Zholy, NCOC, very beginning, providing for invaluable consultancy, Professional Training Center, Tengizchevroil, Imstalkon, suggestions, participating in hundreds of meetings and KPO, ArcelorMittal, Ersai, ESAAB, Montazhspetsstroi, discussions, helping the project in every little aspect of Aktau Training Center, etc.

development. It truly takes enormous personal effort KazWeld is directly involved in all certification and to be able to perform a very uneasy task: to explain gualification attestation activities in the area of welding. from scratch, what is the IIW, how it works, how it can which includes attestation of personnel, authorization of and what should be mandatorily applied in Kazakhstan, training centers, certification of production facilities and why some elements are essential and important, and companies. what is the right sequence to make the whole process KazWeld also plays an increasing role in the IIW and IAB more efficient given the limited resources and time; technical committees, participating in discussions and very thoroughly interview potential candidates for development of international standards in welding. key positions in KazWeld and Kazakhstan Institute of In 2014 major milestones were achieved with KazWeld Welding; travel to all the regions of Kazakhstan, review becoming an observer member of the European and participate in the audit of the first candidate training

Federation of Welding, and performance of the first centers; helping to establish relations with IIW and IAB,

It is definitely worth mentioning that KazWeld was the only worldwide example, which passed the IIW audit within the first year since initial application, allowing Kazakhstan to become a fully-fledged member of IIW and IAB in a record short one year period. In May 2014 represented by the new Executive director Dr. Prof. Rustambek Abdurakhmanov and new administrative and finance manager Mrs. Assiya Taranchiyeva, KazWeld has successfully passed the regular IIW audit and confirmed its compliance to the world leading standards.

One of the key roles in KazWeld success belongs to the Chairman of the Board of Directors Mr. Zhandos Abishev, who has been in this position since KazWeld foundation and continues to put the strategic course and consistently works toward steady development of KazWeld capacity and activities.

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introducing Kazakhstan to the International Welding Society; helping to create numerous organizational documents, applications, helping to set the document management system, even translation of some materials from French to English, to Russian, to Kazakh, on various very technical subjects.

Mr. Rousseau and Mr. Lantigner provided for invaluable guidance for Kazakhstan Welding Project - they showed Kazakhstan what can be achieved and how it can be achieved, and that perfect guidance multiplied by the energy and ambition of Kazakhstan Welding Institute and Kazakhstan Welding Association KazWeld and strong support and in critical times the blunt "push" from TEPK resulted in one of the most successful CSR and local content projects in Kazakhstan, as well as within Total Group.

As was already mentioned Institut de Soudure also played a special role by providing the study materials and teaching expertise for the courses of International Welding Engineer at KSTU in 2013 and supervising it in 2014.

And again in 2014 Mr. Michel Rousseau of the Institut de Soudure took on the lead to deliver a seminar on ANBCC audit procedure for 85 Kazakhstani potential auditors, interviewed candidates for lead assessor and assessor positions, took on the lead assessor role in the ANBCC audit of Ersai Company.

We would like to pass our best wishes to the Institut de Soudure and special thanks to all its staff and teachers whose great personality and personal dedication have helped the Kazakhstan Welding Project to succeed.

7. Sustainability and perspectives

Given the results achieved by the Kazakhstan Welding Project since December of 2009 one can think that Total had invested a fortune into this project.

Of course, the initiative came from Total, and we were fully supporting and fostering this project since the beginning, including financially. But the financial side was not the most crucial and heaviest factor of success and sustainability at all. Initial Total's investments in the Kazakhstan Welding Project from 2010 to 2014 are estimated only around € 1 mln., which is far less that other peers and industry players invested in CSR and local content projects.

Key factors of success we believe are:

• Strong appraisal and support from the President Nazarbayev and the Government of Kazakhstan. This is a clear example of the Mr. Nazarbayev's strategic vision supported by the healthy ambition to industrialize the country and sensing the potential for multiplicative effect and synergies from a wide angle perspective. During the last 4 years President Nazarbayev has repeatedly set the Kazakhstan Welding Project as the leading example in terms of foreign investors' commitments in CSR and local content development. This was a big credit but also a very special

responsibility for Total, which we had stay up to and fulfill our commitments.

- Good industrial and educational base which already existed in Kazakhstan, which required only limited resources to upgrade to the completely international level.
- · Strong effort and personal dedication on behalf of TEPK and its partners.
- Substantial credit to Total from stakeholders and partners, who probably had doubts in the beginning, but nevertheless supported the Project or at least didn't turn down the possibility for potential cooperation. All doubts were cleared when the Project started to bring real results, in terms of training centers certification, introduction of modern study courses in welding and issuing of IIW diplomas.
- Big support from the Institut de Soudure. One of the oldest and most renown European Institutes of Welding, IdS has proved to be a reliable partner with the highest level of expertise, with consistent approach, and dedicated and highly professional staff.

One true uniqueness of the Kazakhstan system, which was accidentally discovered and helped to significantly boost the number of people trained to become international level welding specialists, was introduction of the socalled 1% provision on training, which is required by law and stipulates that all subsoil users in Kazakhstan have to spend 1% of their budget on training of personnel. If by any reasons the subsoil user is not able to spend this 1% (which is sometimes a very significant amount in multi-billion projects like Kashagan or Tengiz), the Government commission supervised by the Contractual Agency is helping the subsoil users to spend this funds on training of local specialists. The priority is given to oil & gas specializations, and to specializations which will let the local specialist to receive internationally recognized diplomas thus increasing its competitiveness on the local and regional job market. The international welders are included in the priority list, and with assistance from Contractual Agency, hundreds of local welders were trained by IIW standards. This is a unique example of a successful public-private partnership, where both industry and locals have significant mutual benefit.

In order for the Kazakhstan Welding Project to continue to flourish and remain sustainable in the longer term, Kazakhstan Welding Association KazWeld and Kazakhstan Institute of Welding need to:

- · Continue to work proactively and efficiently in full accordance with the IIW standards and procedures.
- Expand the network of certified training centers to cover north, south, east, west and central regions of Kazakhstan.
- Attract more members to KazWeld association, set up and maintain good level of stakeholders' relation.
- Maintain fruitful cooperation with the authorities and Contractual Agency to assist and promote training



Kazakhstan.

- of welding specialists to support industrialization of We strongly believe that sharing of this unique experience may help to give the readers the idea on how to implement a similar or may be very different project, • Improve visibility of Kazakhstan Welding Project both and what should be accounted for along the way. in the country and internationally.
- We also want to give special thanks to NCOC, · Introduce full cycle of training for all levels of Tengizchevroil, Karachaganak Petroleum Operating international welders. Company, MaxPetroleum / Samek International and
- Set up and implement consistent system of planning Total E&P Nurmunai who supported and contributed and efficient resource allocation. a lot to the project, showing their strong dedication The successful implementation of the Kazakhstan towards supporting the local content development in

Welding Project will help the Republic of Kazakhstan to launch the full cycle of training for all levels of international welders, ensure transfer of progressive knowledge and technologies in welding (including in highly specialized spheres), will cover the demand for qualified workforce and facilitate implementation of large oil and gas and industrial projects as well as fully implement the relevant objectives set by the President of the Republic of Kazakhstan.

8. Closing words and thanks

We would like to express a special thanks to all the partners and parties involved, who provided for invaluable contribution to the success of the Kazakhstan Welding Project.

Success of the Project and creation of this brochure would not be possible without deep personal involvement of some individuals, who in fact eventually became more than partners but friends. Your positive feedbacks, very interesting and illustrative photos, pointy comments and suggestions had helped us to compile and aggregate this broad and invaluable experience of Kazakhstan Welding Project implementation.

- Kazakhstan.
- Internally, TEPK is glad to share this brochure as a "study case" within Total Group, as other affiliates may be interested to learn on our experience and find this information useful for their CSR and sustainability projects in countries where they operate.
- If you have any questions, don't hesitate to contact us, we would be more than happy to answer them.

CHRONOLOGY OF THE KEY ACHIEVEMENTS

Conforms to the Republic of Kazakhstan Local content development policy, aims to increase the number of qualified welders in RoK, promotes the excellence and competitiveness in welding technology

December 2009:

At the 22nd Foreign Investors' Council Plenary Session standards Mr. Yves-Louis Darricarrere, President of Total E&P has proposed the implementation of Welding project in April 2013: RoK and suggested Total's initiative to bring RoK to the international welding society International Institute of KSTU in collaboration with the French Welding Institute Welding (IIW). The idea and proposals were strongly (Institute de Soudure, France) implemented a Master supported by the RoK President, Mr. Nazarbayev, who Degree in IWE (International Welding Engineer). TCO, nominated two Ministries (Education&Science and NCOC, TOTAL have expressed their support to IWE course Oil&Gas) to be involved and support this project launch.

March 2011:

Karaganda State Technical University (KSTU) was The technical committee TC 82 "Welding and designated to represent the Republic of Kazakhstan at allied processes" is operated under the Kazakhstan the International Institute of Welding (IIW) Welding Association «Kazweld». The TC 82 deals with development and reviewing the national and interstate March 2011: standards as well as national standards on the basis of international, European and other countries standards An independent non-commercial Association, including harmonization. Thus, the Kazakhstan Welding Kazakhstan Association of welding "KazWeld" was Association actively participates in the implementation established. Today, KazWeld has 35 members, including of the law of the Republic of Kazakhstan "On technical such big respectful companies like NCOC, ArcelorMittal, regulation" contributing to the creation of quality Total, Tengizchevroil, Ersai Caspian Contractor, Imstalcon, infrastructure.

KPO, KazMunaiGas, Professional Training Center (PTC), ESAAB, MontazhSpetsStroi, etc...

July 2011: The first group of 22 kazakhstani welding specialists from different regions of Kazakhstan had an access to IWE At the IIW General Assembly in Chennai, India: RoK was course and after successful examination obtained IIW officially elected as its 55th country member. KSTU, diploma. The KSTU professors along with the students KazWeld are members at IIW. Kazakhstan Association of attended this course and got the certificate to conduct welding "KazWeld" has also submitted its candidature this course in 2014. Thus, transfer of theoretical and to the International Authorization Body (IAB) of the IIW methodological knowledge had been provided to KSTU. organization.

April 2012:

KazWeld carried out formal audit at the following training Two IIW procedures (IAB 252r1-11 and IAB 041r3-08 centers in RoK, namely: related to the training programs) have been registered · Professional Training Center in Kuryk village (Ersai in the Committee for technical regulation of Ministry of base) industry and new technology RoK. These procedures are Aktau Training Center in Aktau city approved by MINT for officially use in Kazakhstan

July 2012:

The "Full Authorization" was given to the KazWeld Association to operate as Authorized National Body under international standards. KazWeld Association will

act as Kazakhstan Authorized Body to certify welders' qualification in accordance with IIW international

September 2013:

November 2013:

December 2011 – December 2014:

- Training Center at Kazakhstan TemirZholy
- TrainingCenteratthebaseofBatysOndirisKurylysService in Aksai (Uralsk)
- Karaganda State Technical University
- Firma Svarka Aktobe
 - TegizArystany Atyrau





- NonDestructive Testing Certification Center, Karaganda
- · These training centers received status of the Approved Training Body (ATB) in Kazakhstan to provide welding courses in accordance with the IIW international standards.
- · Further audits planned to be carried out in other regions of Kazakhstan in order to widen the application of international welding training activities (Ust-Kamenogorsk, Almaty, etc...)
- To this day, KazWeld Association is the only existing independent certification and qualification center in the vocational education system in RoK, and is providing certification of the full range of welders qualifications in accordance with international standards

April 7th 2014

IWE course has been launched for the second group of 18 kazakhstani welding specialists (April-May and October-November). This IWE course was conducted by KSTU professors under the supervision of the trainers from IdS. All 18 welding specialists had successfully passed the exams and are holders of IIW diploma.

July 2014:

KazWeld Association had applied for the ANBCC status for ISO 3834

November 18th 2014:

KazWeld Association was elected as an observer into the European Welding Federation.

November 19th 2014:

KazWeld Association received the IAB preliminary authorization for ANBCC status

November 24-25, 2014:

KazWeld Association in cooperation with the French oil&gas company Total has conducted 2-days training on ANBCC rules and regulations in accordance with the ISO 3834 standards.

November 27-28, 2014:

KazWeld Association and Mr Michel Rousseau with auditor team had conducted the first certification of Ersai Caspian Contractors company according to IIW ISO 3834 standard.

21-23 January 2015:

The international audit was held in Kazakhstan Welding Association KazWeld. The goals of audit were:

1. To get the full authorization on the IIW Manufacturer Certification Scheme complying with ISO 3834;

2. To get the full authorization on certification of welding personnel who are in charge of welding coordination complying with standard ISO 14731;

3. To get the full authorization on Certification of Welders, Welding Operators and Brazers in accordance with European Federation for Welding, Joining and Cutting (EWF) Scheme;

4. To get the full authorization on education, examination and qualification of International Welding Inspectors.



- Two international experts conducted the audit: Mrs. Rute FERRAZ, Chief Executive Officer of the International Authorization Board of the International Institute of Welding, IAB / IIW (Portugal) and Mr. Tim JESSOP, Associate Director - External Relations, The Welding Institute (UK).
- Two international assessors were supervised the audit process made by the Kazakhstani auditors at Tulpar-Talgo railwaywagon plant in compliance with ISO 3834 requirements

3 - 5 February 2015:

IIW & IAB technical meetings were held at the French Institute of Welding in Paris, the headquarters of the International Institute of Welding (IIW). There was a voting process on granting the authorization to Kazakhstan Welding Association KazWeld status on Authorised National Body for Company Certification



Organization	Needs	Benefits
 Industry sector groups, joint ventures and associations 	 Networking\contacts Visibility Explore possibilities of joint ventures or other types of cooperation on a global international or regional scale (Networking). 	 Prestige Hire a professional and qualified local workforce. Improve competitiveness. Participate in development of the top industry standards by taking a lead in evaluation, qualification and standardization processes. Meet the obligatory requirement for local content and industry standards Get lower training costs
National Bodies, state agencies, holdings, associations and Region • Standards • Bodies	 Input to ISO Standards Modernize the Vocational Educational Training (VET) system of RoK by allowing KazWeld to act as an independent qualification and evaluation center for welders. Integrate world leading and local industry standards in welding. Meet the growing demand for qualified workforce for large industrial projects supporting the National Program for the forced industrial and innovational development of RoK. Promote international cooperation and support of local content. Access to the world latest welding technology: technology transfer, possible JVs, scientific research, studies, international educational and training programs 	 Better National\Regional Standards Industry safety level Help the competitiveness of the local workforce. Local employment Increase the number of certified training centers in RoK.
StandardizationsProfessionals	 Involvement in other standards development 	 Influence on ISO standards Improvement of own country's standardizations
Training Cont		
 Training Centers Universities 	 Obtain additional funding through State related programs and funds. 	 Get international qualifications Train international level of welders
 Scientific Research 	 Build strong connections and networking within industry 	 Improve study programs Get access to the latest international
Institutions	 Access to the world latest welding technology: technology transfer, scientific research, studies, international educational and training programs 	study programs, standards and research. This information is continuously updated through an international knowledge base.







KAZTAG

04.05.2011

Kazakhstan Welding Association KazWeld has been created

Almaty. May 4. KazTAG. As reported by KazWeld press service, the first meeting of Kazakhstan higher education institutions and big industrial companies in the country. Welding Association KazWeld took place in Astana, KazWeld sets itself a goal to achieve Kazakhstan's with participation of representatives from RoK membership in the International Institute of Welding ministries of Industry and New Technology, Oil and (IIW), as well as membership in the International Gas, NC KazMunaiGas JSC, NC Kazakhstan Temir Zholy Authorization Body for accreditation and certification, JSC, Tengizchevroil, ArcelorMittal, Ersai, KazEnergy points out the text. Association.

Besides that the Association is determined to implement "The idea of creation of Kazakhstan Welding Association international welding standards for training, education KazWeld was driven by severe shortage of highly qualified and attestation in Kazakhstan, to accredit specialized welders in oil & gas, ore mining and smelting, machinecenters for training in accordance with IIW international building industries and other industrial sectors. Growing standards, as well as to incorporate existing welding needs of Kazakhstani economy demand an increasing educational organizations and all companies interested number of blue-collar employees, improved quality of in this kind of specialists. their training, as well as raised efficiency of operation of KazWeld press release states that "Establishment of the the welding industry in Kazakhstan as a whole", says the Association provides free access to the newest global press release by KazWeld issued on Wednesday.

technologies and know-how and opportunities for The Association has incorporated a series of educational training Kazakhstani specialists in accordance with the organizations such as the country's largest polytechnic international standards recognized in 54 IIW member countries".



«STROITELNIY VESTNIK»

Republic construction newspaper

09.05.2011

On April 28 in the capital's Grand Park Esil hotel the first meeting of Kazakhstan Welding Association KazWeld was held, which was created with support of TOTAL company.

The first meeting took place with participation of representatives from the Ministry of Industry and New Technology, Ministry of Oil and Gas, Ministry of Education and Science, as well as representatives of national and foreign companies of various business profiles.

On December 4, 2009 in Astana during the XXII Plenary session of the Foreign Investors' Council under the President of the Republic of Kazakhstan the idea of creating the Kazakhstan Welding Association and Welding Institute was introduced. The project was supported by the Head of the State and by the RK Government because this initiative is driven by severe shortage of highly qualified welders in oil and gas and other industries. Use of international standards of the International Institute of Welding will enable Kazakhstan to improve the professional staff of welding specialists for realization of essential projects planned in Kazakhstan.

As we were told by Mukhtar Mankeyev, Chief Executive Officer of Kazakhstan Welding Association KazWeld, on March 15 of this year, there was a general meeting involving the founders of the Association and approximately 100 representatives of interested organizations. The Charter was adopted and there was a discussion of text of the Foundation Agreement, a decision was made to create the Association.

Purpose behind creation of the Association is becoming a member of the International Institute of Welding (IIW) that was founded in 1948, with currently 54 member countries around the world.

"If our application to join is granted", elaborated Mukhtar Mankeyev, "we will be able to train our specialists according to international standards here in Kazakhstan."

The largest companies of Kazakhstan will become members of the Association. The membership will enable them to have free access to the newest welding technologies as well as an opportunity to train students according to international standards issuing diplomas and certificates acknowledged in 54 member countries of the International Institute of Welding.

Whom did you invite to today's meeting?

"It is representatives of about 50 companies of the oil & gas sector, ore mining, metallurgy, and construction organizations. In other words it is companies from such lines of our economy where we encounter severe shortage of Kazakhstani welding specialists. Hiring

foreign specialists for critical work is expensive, and our goal is to increase Kazakhstani local content in regular labor force."

Where will training of welders take place?

"Training will be carried out by specialized training centers that will be accredited by the International Institute of Welding. Altogether in Kazakhstan we plan to create about 3-4 such centers in different regions to cover as large of a territory as possible.

Upon accreditation of our Association by the International Institute of Welding there will be an international audit conducted. The Institute's representatives will scrutinize our training method, training facility, gualification of people who will train the specialists. It is necessary for certification of the training center for training welders by the Institute of Weldina."

By your estimate how many qualified welders does our country need?

"We are in the process of doing this work, and I can positively say that within next five years the problem of training certified welding specialists will be immediate. Just the oil & gas industry alone requires several thousand welders. And that is not taking into account mining and metallurgical sector, construction, housing and public utilities system, metallurgy and other branches of industries.

Today's event goal is to election of the Association's Board of Directors, election of the Association' Chairman of the Board of Directors and forming three Operating Committees."

Insertion

There are associations in Europe of social-andprofessional nature. It is such professional nongovernmental associations that design the policy and rules for personnel training and awarding gualification.

Currently there are two international engineering associations that incorporate global welding community. They are the International Institute of Welding (IIW) founded in 1948, with over 50 developed countries in its membership, and the European Federation for Welding (EWF) founded in 1971 incorporating 28 European countries.

Within the framework of IIW and EWF in cooperation with ISO there was created a harmonized system for training, qualification and certification of personnel for welding productions based on observation of requirements set by the series of standards ISO 9000, ISO 14000, ISO 3834/EN 729 and ISO 14731/EN 719 for fabrication of critical welding structures and certification of welding productions with regard to qualifying the personnel.

«INDUSTRIAL KARAGANDA»

02.04.2013

Welding unlimited

Under the auspices of Kazakhstan Welding Institute at Karaganda Technical University the first in The primary goal is training of international level Kazakhstani welding production engineers. Upon completion of the course the attendants will receive a diploma of the international welding engineer that is recognized by 55 countries in the world that are members of the International Institute of Welding (Europe, North and South America, Japan, China, Russia, etc.). This will enable the course graduates to work in any national or foreign company both within our country and outside of it. Training of international welders is carried out by agreement with the RK Ministry of Oil and Gas, in cooperation with the French Welding Institute (Institut de Soudure), independent Kazakhstan Welding Association KazWeld and with support of international oil & gas companies.

Kazakhstan courses will start training in International Welding Engineer program. This international project is realized in line with the commission of the Head of the State for Kazakhstan becoming a member of the worldwide representative body - the International Institute of Welding and for modernization of RK system of vocational technical education. Furthermore realization of the project is a contribution of KarGTU to realization of the State Program for Accelerated Industrial Innovative Development and the Strategy Kazakhstan-2050. It is also confined to the 60th anniversary of KarGTU's foundation.



«DELOVOI KAZAKHSTAN»

12.04.2013

nternational level milestone event: Kazakhstan commenced training of international welding engineers whose diplomas will be recognized in 56 countries around the world. Even though the training is held in the 'industrial heart of the country', Karaganda, the effect from practical application of knowledge will be felt during the next years to come by the whole country and near abroad.

The process started unfolding back in December of 2009 during the XXII Plenary Session of the Foreign Investors Council under the President of the Republic of Kazakhstan dedicated to issues of involvement of foreign investors in the policy for diversification and technological development of our country. It was then when the largest player in the oil & gas sector in Kazakhstan, TOTAL E&P Kazakhstan, advanced the idea of establishing Kazakhstan Welding Association and Kazakhstan Welding Institute on the analogy of the French Welding Institute.

The initiative found support with both presidents, of Kazakhstan and France. Innovative idea started impetuous implementation. As early as on October 28, 2010 'Kazakhstan Welding Institute' research institute was organized in Karaganda State Technical University for training of international level specialists and transfer of modern welding technologies in oil & gas industry. In March of 2011 Kazakhstan Welding Association KazWeld was established.

"Thanks to support provided by TOTAL and the French Welding Institute, on July 17, 2011 Kazakhstani Welding Institute was granted membership of a prestigious club 'International Institute of Welding' and successfully passed international accreditation," states Chancellor of KarGTU academician of RK National Academy of Sciences Arstan Gazaliyev. "Today within the framework of cooperation agreement between the French Welding Institute and Kazakhstan Welding Association KazWeld, for the first time ever in Kazakhstan, in KarGTU we started training the first batch of specialists from Kazakhstani companies with awarding an internationally recognized welding engineer diploma."

Although Kazakhstan Welding Institute has already trained 10 specialists in the program 'International Welder' and 2 persons in the program 'International Welding Practitioner', today in the enrolled group of 20 persons teaching is performed by specialists from the French Welding Institute.

"The program envisions 530 hours," explains lgor Bartenev, the Director of Kazakhstan Welding Institute.

"Training is done by French teachers in English. Translation is made of a Kazakhstani translator. We already use prepared licensed materials of the French Welding Institute in English and Russian language that compactly absorbed all experience of our foreign colleagues acquired over many years".

Reasonable question: why so much attention is given to welding?

"Commissioning of the courses for training welding engineers based on international standards is of crucial importance for innovative development of Kazakhstan's industry: specialists with such level of qualification are in demand almost in all areas of production," reckons Arstan Gazaliyev.

"Just in the course of preparation of startup of 'Bolashak' onshore plant welding was used to perform very complicated erection of steel structures weighing over 60 thous. tons," elaborates upon the theme Pierre Offant, the Managing Director of North Caspian Operating Company B.V.. "Another 40 thousand tons of steel structures had to be welded for startup of the offshore plant. Apart from Kashagan there is a comprehensive line of large scale projects carried out in Kazakhstan almost in all industrial sectors. To their execution the welders will be required and involved more and more each year, and not only blue-collar employees but engineers as well."

"We routinely diversify the national economy. In the Program of Accelerated Industrialization I set a goal: over the course of two five-year periods change the identity of our economy, make it independent of fluctuation of global raw material prices," says in the Address to the people of Kazakhstan 'Strategy "Kazakhstan-2050": new political course of the established state" President Nursultan Nazarbayev. "Since 2010, 397 investment projects with the total value of 1 797 billion tenge have been carried out and over 44 thousand work places have been created within the framework of the Program of Accelerated Industrialization."

The people of Kazakhstan have no intention to be satisfied with what has already been achieved. There is much more to be done. Kazakhstan should intensify the development thrust of the state over the long run being guided by universal economic realism. No wonder that the personnel issue has come under the public limelight.

"As a matter of fact it is the first center created not for a specialized enterprise but for the whole country. Opening of the center allows us to talk about localization of human resources, about production of specialists competitive almost anywhere in the world," notes Vice-Minister of RK Ministry of Education and Science Sayat



Shayakhmetov. "Creation of such centers is not simply Tengizchevroil and others have placed their requests for timely but vital". training of specialists. It is no surprise that before training started top managers of the leading national and foreign "Currently pursuant to the Program for Accelerated companies had personally visited Kazakhstan Welding Industrial Innovative Development there are many new Institute, and remained pleased after examining the factories started, advanced equipment is installed and laboratory facilities. innovative technologies are implemented. That is why

it is so important for Kazakhstan to have personnel that In substance, along with advanced technologies in can work not worse but considerably better than foreign training Kazakhstani Institute today can provide the specialists," elaborates on the theme the Chairman of students with a great practical base. The laboratories are the Board of the National Agency for Development outfitted with the most high-tech welding equipment, of Local Content 'NADLoC' Kairat Bekturgenev. "Today starting from stationary to the latest models of portable the Ministry of Industry and New Technologies acts units. All cutting edge equipment is available and proactively and starts training specialists ahead of operable here, except for robots, which the Institute time for plants planned to be constructed. This project, would be happy to provide for the students with the help currently executed in Karaganda, comes under such of sponsors. paramount, significant projects."

Thus the primary goal of the Strategy-2050 starts to "For Kazakhstan the industry that is most integrated acquire real contours, taking shape not only through into the global economic process is the oil & gas the improved marketability of output products but industry," states the Director of the Center on Personnel also through the more valuable human capital. It is Development for the Oil & Gas Industry under the the working person that will help the country to rank Ministry of Oil & Gas, Timur Kulakhmetov. "In Kazakhstan, amongst developed states of the planet. having over 200 of subsoil use contracts for oil & gas The fact that the project of welding engineers training exploration and production, over 120 million USD are with the consecutive issue of internationally recognized allocated annually for training of local specialists."

"For that very reason implementation of the full cycle of training the specialists of the whole range of qualifications: from a worker to inspector and welding engineer, has crucial importance for the industry," elaborates on the theme Brandon McMahon the Managing Director of TOTAL Exploration & Production Kazakhstan. "This is the true goal of the project we have initiated."

Such giants of business as Karachaganak Petroleum Operating, North Caspian Operating Company B.V.,

diplomas is implemented based on the 'win-win' principle, will eventually be advantageous to everyone: the state, its economy, its people, and not only to people of Karaganda oblast but of the whole country.

WEBSITE OF KPO

(Karachaganak Petroleum Operating)

12.04.2013

First graduation of attendants of the 'International Welding Engineer' training program

The first graduation for the training program 'International Welding Engineer' ran with support by Karachaganak Petroleum Operating B.V., North Caspian Operating Company and Tengizchevroil, took place in Karaganda.

This program is executed under Kazakhstan Welding Institute at Karaganda State Technical University (KarGTU). At the end of November, students who passed the exams successfully, received the diplomas of International Welding Engineer (IWE), which is recognized in 56 countries of the world.

The graduation ceremony was attended by the representatives of the French Embassy in Kazakhstan, representatives of the RK Ministry of Industry and New Technologies, Ministry of Education and Science, Ministry of Oil & Gas, as well as the members of French Welding Institute and largest oil companies such as KPO, TCO, NCOC, Total and other Kazakhstan enterprises.

As Isak Sekeev, Corporate Affairs Manager for KPO, noted, "KPO was very enthusiastic about taking part in this project's implementation, since it is a unique opportunity for Kazakhstani welding engineers to raise their expertise to a whole new level and in the future to be able to implement it at the plants of our country as well as any international project abroad".

The project was carried out in accordance with the commission of the Head of the State N.A. Nazarbayev and on the initiative of the French oil and gas company Total and supported by the RK Ministry of Oil & Gas, French Welding Institute (Institut de Soudure) and independent Kazakhstan Welding Association KazWeld.

The 'International Welding Engineer' course consists of four modules: "Welding Processes and Welding Equipment", "Materials and their Characteristics in the Welding Process", "Fabrication and Design of Welded Structures", "Production and Design of Operational Characteristics".

National Welfare Fund "SAMRUK-KAZYNA" (website)

03.06.2013

Kazakhstan Welding Project supported by over 30 local and international companies

Today the annual general members' meeting of the Kazakhstan Welding Association KazWeld took place. In a relatively short period Kazakhstani welding project was supported by over 30 locals and international companies representing oil and gas industry, ore mining and smelting and engineering industries, as well as the leading educational institutions of the country training welding experts.

The project was carried out in accordance with the commission of the Head of the State N.A. Nazarbayev and on the initiative of the French oil and gas company Total and supported by RK Ministry of Oil & Gas, RK Ministry of Industry and New Technologies, as well as international oil & gas companies Karachaganak Petroleum Operating B.V., North Caspian Operating Company and Tengizchevroil etc.

The Chairman of the Board of the Association J. Abishev notes that since KazWeld was founded two years ago the following accomplishments were made:

- Kazakhstan has become a member of the International Institute of Welding;

- The Association successfully passed the international audit;

- Training courses for international welding engineers and international welding practitioners were opened;

- Training courses for international welding engineers were arranged at the premises of Karaganda State Technical University. The training is conducted by experts from French Welding Institute using its curriculum;

- Six training centers in four regions of Kazakhstan obtained international accreditation and two more will obtain it in the nearest future.

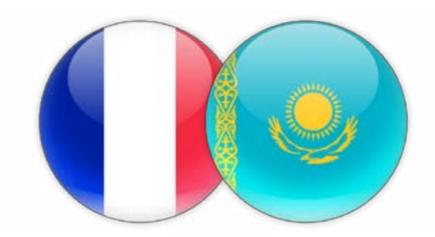
Successful implementation of international welders' training standards into Kazakhstani educational programs is an important contribution of the Association to the State Program of Accelerated Industrial and Innovative Development and the Strategy "Kazakhstan 2050".

After the graduation, the students receive diplomas recognized in 56 member states of the International Welding Institute (among them are countries of Europe, North and South America, Japan, China, Russia etc.). It is a unique opportunity for Kazakhstani graduates of the courses to raise their level of expertise for meeting the highest international standards, gain their competitive advantage, and be able to work in leading local and international companies in our country as well as abroad.

WEBSITE OF THE EMBASSY OF FRANCE IN RK

Des soudeurs spécialisés formés au Kazakhstan

🖊 'est à la Société Total que revient l'initiative de la For the first time ever 20 attendants of the 'International Création d'un Institut technique de soudure et d'une Welding Engineer IWE' program have graduated from Association kazakhstanaise de soudure -KazWeld- en KarGTU. The classes in the group where specialists 2009, qui a symétriquement fondé en France l'Institut from all of the Republic's regions studied were lead by français de soudure en 2011. L'objectif était de former professors of French Welding Institute. Diploma issued by des techniciens spécialisés de niveau international, ce the International Institute of Welding (IIW) is recognized gui est chose faite, puisque non seulement les premiers in 56 countries of the world. techniciens viennent d'être diplômés, mais le Kazakhstan As deemed by the authorities of Karaganda Technical accède à l'Association Internationale des Soudeurs en University, training in the course provides Kazakhstani tant qu'état-membre aux côtés de la Russie, de la Chine engineers a unique opportunity to raise their professional et des USA, du Japon et des pays de l'UE entre autres. competence, competitive performance in the labor « La maîtrise d'une telle technique permet à notre pays market and get an opportunity to work in any national de développer les secteurs de l'économie requérant des or foreign company. produits industriels de haute performance », indique M. KarGTU's teachers also attended the course and can Jandos Abichev, président du directoire de l'Association. (Liter)



AKTOGAI KZ

07.12.2013

Welding engineers from Karaganda have received an international qualification

Welding engineers from Karaganda have received an international qualification.

KarGTU's teachers also attended the course and can now lecture according to the international standards. As is reported by the university, the project is executed in line with the commission of the Head of the State with support of international oil & gas companies, French Welding Institute and independent Kazakhstan Welding Association KazWeld. Training of international level qualified specialists facilitates accomplishments of tasks set by the Strategy "Kazakhstan-2050".





FACTS AND FIGURES



	Year of creation of the Kazakhstan Institute of Welding
	Year of election of the Republic of Kazakhstan to the Ir
	Year of creation of the Kazakhstan welding association
	Year of election of the Kazakhstan welding association Authorization Body, IIW
	Year of obtaining the ANB Full authorization status from «KazWeld»
	Year of obtaining the IAB preliminary authorization for association «KazWeld»
	Year of election of the Kazakhstan welding association Federation (as an observer)
	Kazakhstan welding association «KazWeld» got full aut welding personnel who are in charge of welding coord
	Kazakhstan welding association «KazWeld» got full au according to International manufacturer certification s

Description	Quantity
Number of Kazakhstan welding association «KazWeld» association members	35
Number of the Kazakhstan welding association «KazWeld» Approved Training Bodies (ATB)	10
Number of trained International Welding Engineers (including transition arrangements)	53
Number of trained International Welding Practitioners (including transition arrangements)	25
Number of trained International Welder-Technologists (including transition arrangements)	7
Number of trained International Welder Inspectors (including transition arrangements)	5
Tube welders	92
Plate welders	47
Fillet welders	21
Welders currently at training process	49
Number of IIW country-members (International Institute of Welding)	57
Number of IAB country-members (International Authorization Body)	46
Number of IAB country-members ANBs	43
(Authorized National Bodies)	45
Number of IAB country-members ANBCCs	26
(Authorized National Bodies for Company Certification)	20
Number of IAB country-members PCSs	11
(Authorized National Bodies for Personnel Certification System)	

n	Year
g	2010
International Institute of Welding	2011
n «KazWeld»	2011
n «KazWeld» into the International	2011
om IAB by the Kazakhstan welding association	2012
or ANBCC status by the Kazakhstan welding	2014
n «KazWeld» to the European Welding	2014
uthorization on international certification of rdination complying with standard ISO 14731	2015
uthorization to assess manufacturers system in welding, ISO 3834	2015

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ACRONYMS

ANB – Authorized National Body ANBCC - Authorized National Body for Company Certification ATB – Approved Training Body ATC – Aktau Training Center CSR – Corporate Social Responsibility EWF – European Welding Federation FIC – Foreign Investor's Council JV – Joint Venture IIW – International Institute of Welding IAB – International Authorization Body IW – International Welder IWP – International Welder Practitioner IWS – International Welding Specialist IWE – International Welding Engineer IWI – International Welding Inspector ISO – International Standardization Organization IdS – Institut de Soudure\French Welding Institute KAZWELD - Kazakhstan Welding Association KSTU – Karaganda State Technical University KPO – Karachaganak Petroleum Operating NCOC – North Caspian Operating Company PCS – Personnel Certification System PS – Plenary Session RoK – Republic of Kazakhstan TCO – TengizChevrOil TEPK – Total E&P Kazakhstan VET – Vocational Educational Training

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