

Documentation of Project Results

2008 - 2016
PAKISTAN



Coordination



With support of



Federal Ministry
for Economic Cooperation
and Development

BERUFLICHE FORTBILDUNGSZENTREN DER BAYERISCHEN WIRTSCHAFT (BFZ) GGMBH

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COORDINATION OF PROJECT

bfz gGmbH (Training and Development Centers of the Bavarian Employers' Associations) was founded in 1983 by the private sector. With more than 2,000 employees, it is today one of Germany's leading service providers in the areas of education, consultancy and integration and provides in its 150 training locations high quality vocational educational training. The International Division of bfz conducts development cooperation projects on behalf of the World Bank, the European Union and the German Government in all parts of the world.

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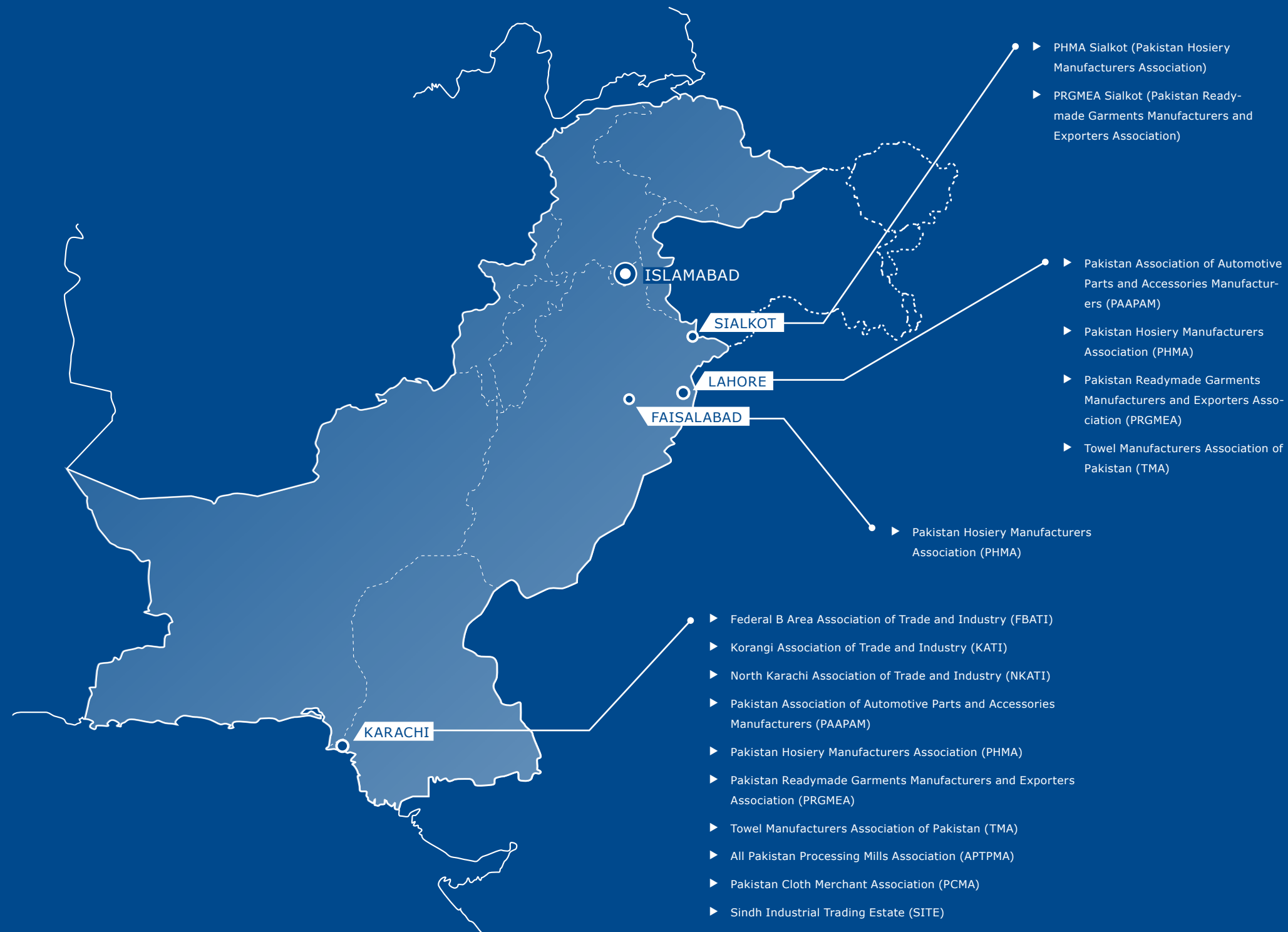
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1. Introduction

Industry in Pakistan is experiencing adverse effect of energy shortage. This calls for change in attitude towards energy consumption. From the supply side, there is little industry can do, except strategically move towards the right energy mix of gas, grid and renewable sources. More critical is how efficiently these sources of energy are being utilized. Prior to ascertaining the optimal efficiency of energy consumption, a thorough analysis of energy balance of an enterprise is required. Based on the analysis of current energy use the saving potential can be detected and most beneficial solutions identified. To achieve permanent cost savings managers and workers must be trained and a system implemented to maintain the efficiency of equipment and to continuously improve the energy efficiency of the production processes.

Developing competitiveness as the core competency creates strategic advantage for any business. In today's world, given the limited resources, industry must efficiently use input resources, skim its processes which are not creating value, increase reuse and apply sour-

ce reduction of waste by changes of input raw materials, technology changes, good operating practices and product changes, enhance recyclability and maximize use of renewable resources. Eliminating waste within the process rather than at the end-of-pipe will enable industry to curtail pollution and adverse environmental impact. Simultaneously, industry must strive to attain strategic advantage through promotion of a safe and healthy working environment by providing a framework that helps organizations to: consistently identify and control health and safety risks; reduce the potential for accidents; aid legislative compliance; and improve overall performance.

This publication is a summary of the “Project ESPIRE”, implemented between 2008–2016 in Pakistan. It shows how the project objective “Businesses in the textile and other selected industries are operating in an economically more efficient and ecologically more sustainable way by using adapted practices and technologies” was implemented.

Therefore, best practices were selected and documented. The reader is invited to learn from these experiences and replicate them. For more information, you can find all contact details of the involved institutions at the end of the documentation.

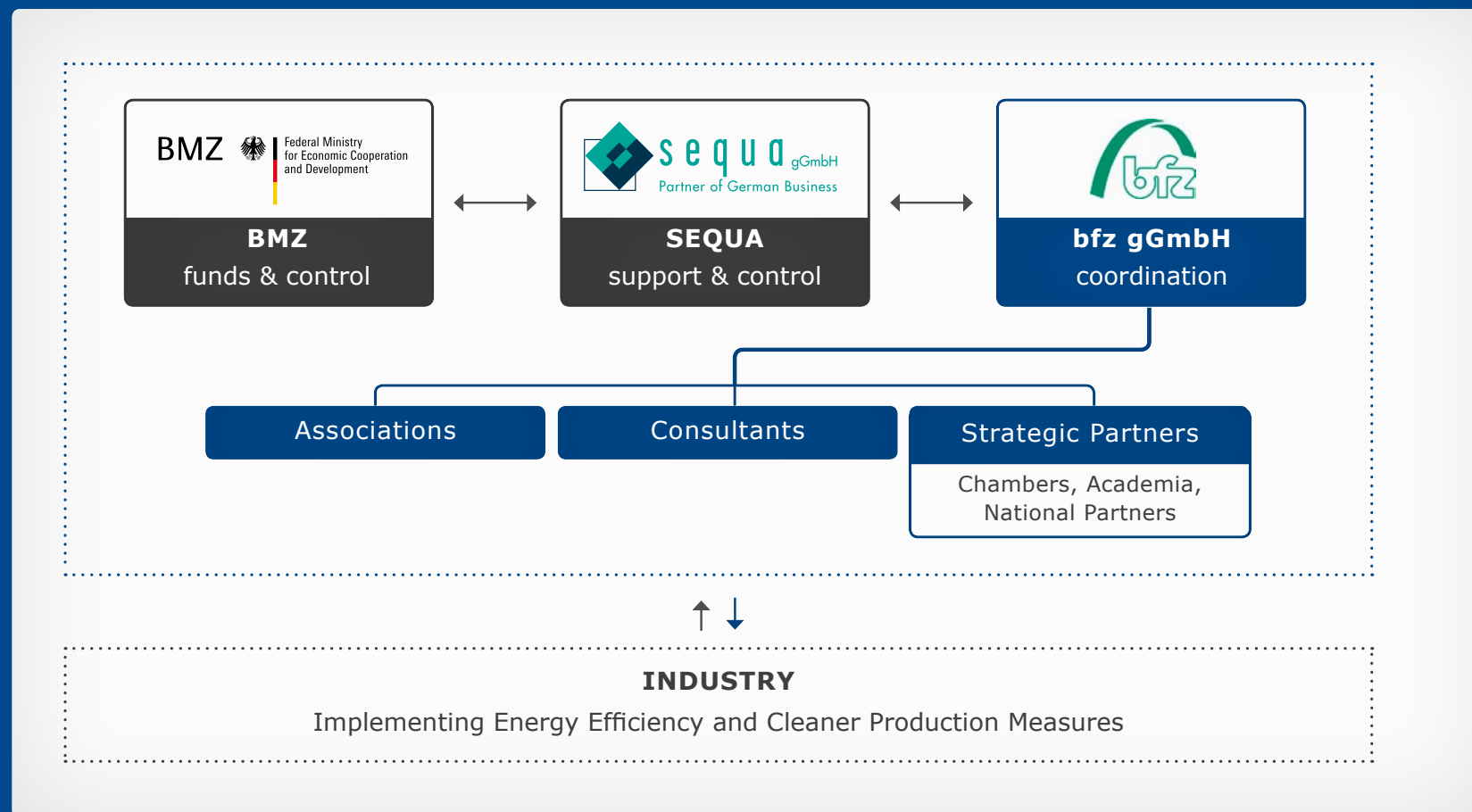
“ESPIRE PROJECT CONTRIBUTED TO IMPROVE OUR PROFESSIONAL COMPETENCES, TO PROVIDE BEST QUALITY SERVICES IN ENERGY EFFICIENCY. THERE ARE REMARKABLE CHANGES INSIDE PARTNER ASSOCIATIONS AFTER THIS PROJECT. NOW THEY HAVE BETTER UNDERSTANDING OF THE IMPORTANCE OF ENERGY EFFICIENCY FOR THEIR OWN AS WELL AS NATIONAL INTEREST. THIS PROJECT PROVED TO BE A VERY GOOD CHANNEL AS A CONFIDENCE BUILDING MEASURE BETWEEN THE CONSULTANTS AND ASSOCIATIONS, AND CONSEQUENTLY WITH THE COMPANIES.”

Mr. M. Farooq, Energy Consultant

2. ESPIRE Project

The project ESPIRE started in July 2008 in Karachi, Sindh, it was then extended to Lahore, Punjab, in 2011 and ends in May 2016.

Graphic representation of the lines of communication and responsibilities of Project ESPIRE and its partners.



PROJECT OBJECTIVE

ESPIRE's principal project objective is to support industries in Pakistan to work economically more efficiently and ecologically more sustainable, by directly supporting Business Associations in that field.

PROJECT PARTNERS

ESPIRE is a partnership project between the Training and Development Centers of the Bavarian Employers' Associations (bfz) gGmbH and the following business associations in Lahore and Karachi in Pakistan:

- ▶ Federal B Area Association of Trade and Industry (FBATI)
- ▶ Korangi Association of Trade and Industry (KATI)
- ▶ North Karachi Association of Trade and Industry (NKATI)

- ▶ Pakistan Association of Automotive Parts and Accessories Manufacturers (PAAPAM)
- ▶ Pakistan Hosiery Manufacturers Association (PHMA)
- ▶ Pakistan Readymade Garments Manufacturers and Exporters Association (PRGMEA)
- ▶ Towel Manufacturers Association of Pakistan (TMA)
- ▶ All Pakistan Processing Mills Association (APTPMA)
- ▶ Pakistan Cloth Merchant Association (PCMA)
- ▶ Sindh Industrial Trading Estate (SITE)

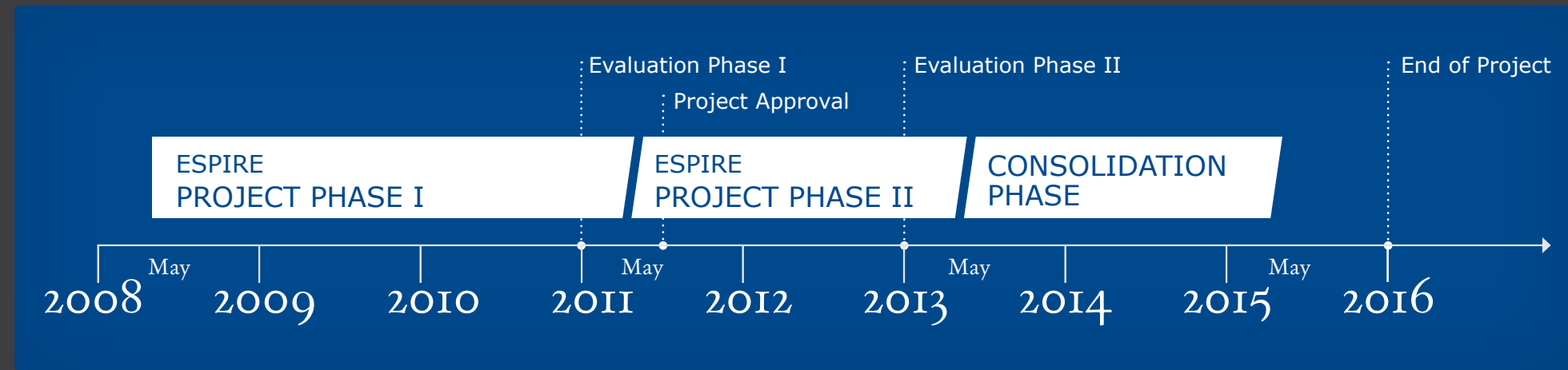
ESPIRE's institutional and national strategic partner in Pakistan was Small and Medium Enterprises Development Authority (SMEDA) that supported the project with their technical team, organizational expertise and by providing local know-how.

Textile and Automobile Business associations in Lahore and Karachi were the principal partners of bfz and guaranteed outreach and sustainability of the project activities to start making energy conservation and cleaner production part of Pakistani companies work routine.

Besides the mentioned Business Associations, the project worked with several other partners during the project period, such as training institutes like Pakistan Readymade Garments Technical Training Institute (PRGTTI), Institute of Knitwear Technology Karachi (IKTK), SMA Rizvi Textile Institute (SMARTI), Cleaner Production Institute (CPI), as well as the Academia, like the University of Karachi (KU), National Textile University (NTU), Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI) and the National University of Sciences and Technology (NUST).

Project Timeline of ESPIRE

The project was executed in three phases:



PHASE I

During the first phase, the focus was on capacity building of associations in order to provide services to their members:

- ▶ A Steering Committee was established, comprising a representative from each partnering stakeholder.
- ▶ A pool of Group Consultants were hired and trained.
- ▶ To increase outreach of the project and to include entrepreneurs in establishing demand, a focus group (nucleus) approach was introduced.
- ▶ More than 100 representatives from industries participated in different trainings.
- ▶ A course was established and implemented on Environmental Management in collaboration with the University of Karachi.
- ▶ A testing laboratory was supported with equipment at SMA Rizvi Textile Institute.
- ▶ Seven companies were supported in establishing their Environmental Management Plan (EMP) and producing Environmental Monitoring Reports (EMR) as required by local Environment Authority.

PHASE II

During the 2nd phase, the focus was on developing environmental services and strengthening network partners technically to provide services to their members:

DEVELOPMENT OF SERVICE PORTFOLIO

- ▶ A complete Training and Consulting Service Portfolio on expert-level in Energy Efficiency was developed, tested and applied (e.g. Energy Auditing, Energy Management System, Energy Information System, Energy Manager Training).
- ▶ A Training and Consulting Service in Green Productivity was developed.

NETWORKING & COOPERATION

- ▶ Consultants from Lahore and Karachi were linked together for cooperation.
- ▶ SMEDA and PHMA with Consultants provided consultancy and trainings from the ESPIRE Service Portfolio.
- ▶ NUST and SMEDA together with Consultants established a cooperation for training of students in energy efficiency and green productivity.

- ▶ Technical support cell (PHMA South Zone) established relations with Karachi Electric Supply Corporation (KESC) to give trainings for industry on Energy Efficiency.

STRENGTHENING CAPACITIES OF STAKEHOLDERS

- ▶ PHMA Karachi (Technical Support Cell) independently provided services from ESPIRE portfolio and beyond.
- ▶ SMEDA Karachi, PRGMEA and PAAPAM started marketing ESPIRE services and providing training and consultancy to the industry.

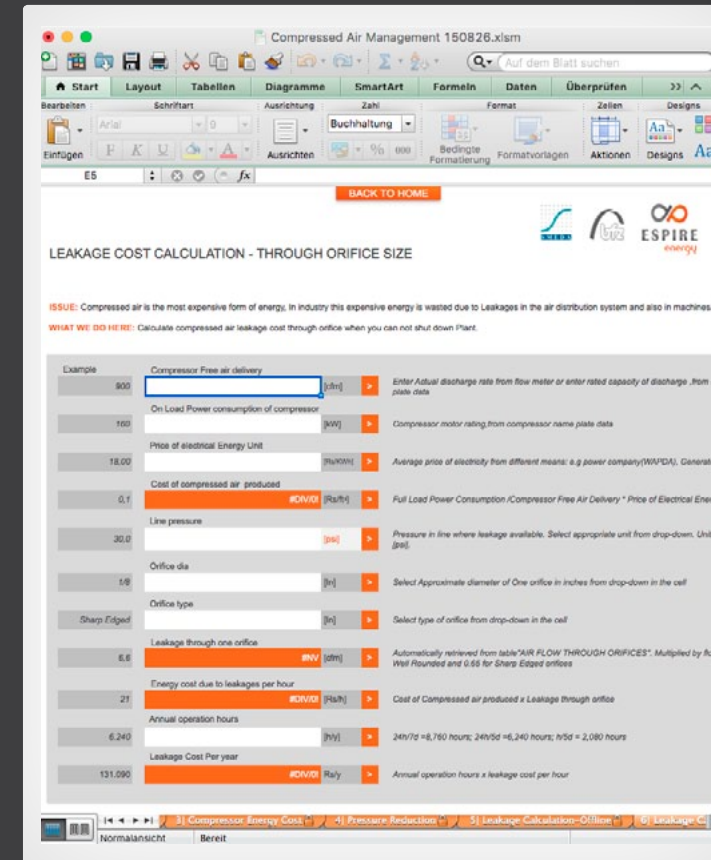
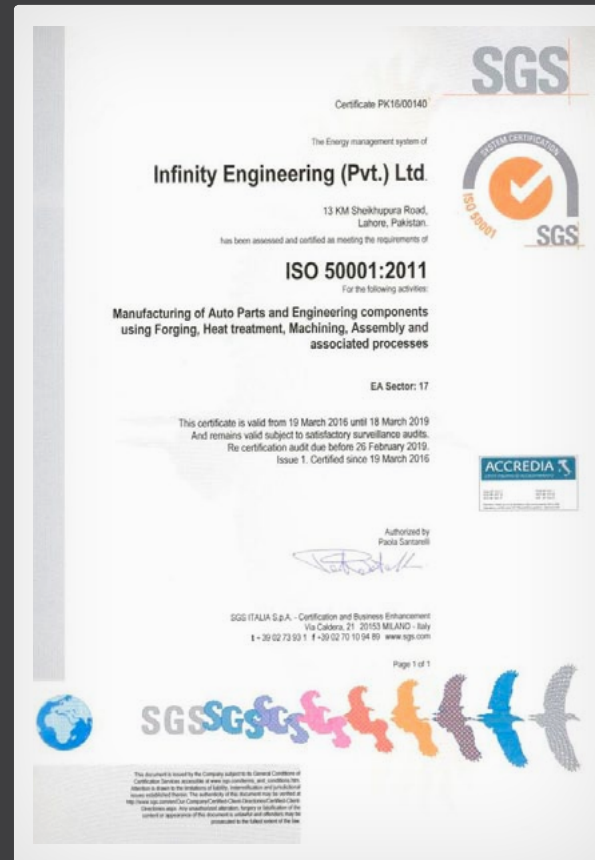
IMPLEMENTATION OF SERVICES

- ▶ PHMA Karachi implemented the entire ESPIRE portfolio through its Technical Support Cell, also to PRGMEA members.

- ▶ PRGMEA and FBATI marketed the ESPIRE Energy Services and nominated companies for receiving consulting services.
- ▶ PAAPAM marketed and organized awareness campaign for ESPIRE Energy Portfolio.
- ▶ SMEDA Karachi and SMEDA Lahore promoted and organized ESPIRE services and conducted technical supervision.
- ▶ Consultants provided technical and training services in the scope of the ESPIRE project and beyond.
- ▶ More than a dozen success stories about implementation of Energy Efficiency and Cleaner Production measures were documented and shared with Network partners and industry.

CONSOLIDATION PHASE

- Nine Self-Assessment tools were developed to help industry measure and improve their energy and OHS performance.
- Consultants improved their skills and portfolio by receiving international trainings and certifications.
- A national study on "Return on Prevention" was conducted jointly by ESPIRE and GIZ (Support Programme to the Textile and Garment Industry in Punjab), in collaboration with local partners.
- Infinity Engineering Pvt. Ltd. becomes first Pakistani company to get ISO 50001 Energy Management System Certificate

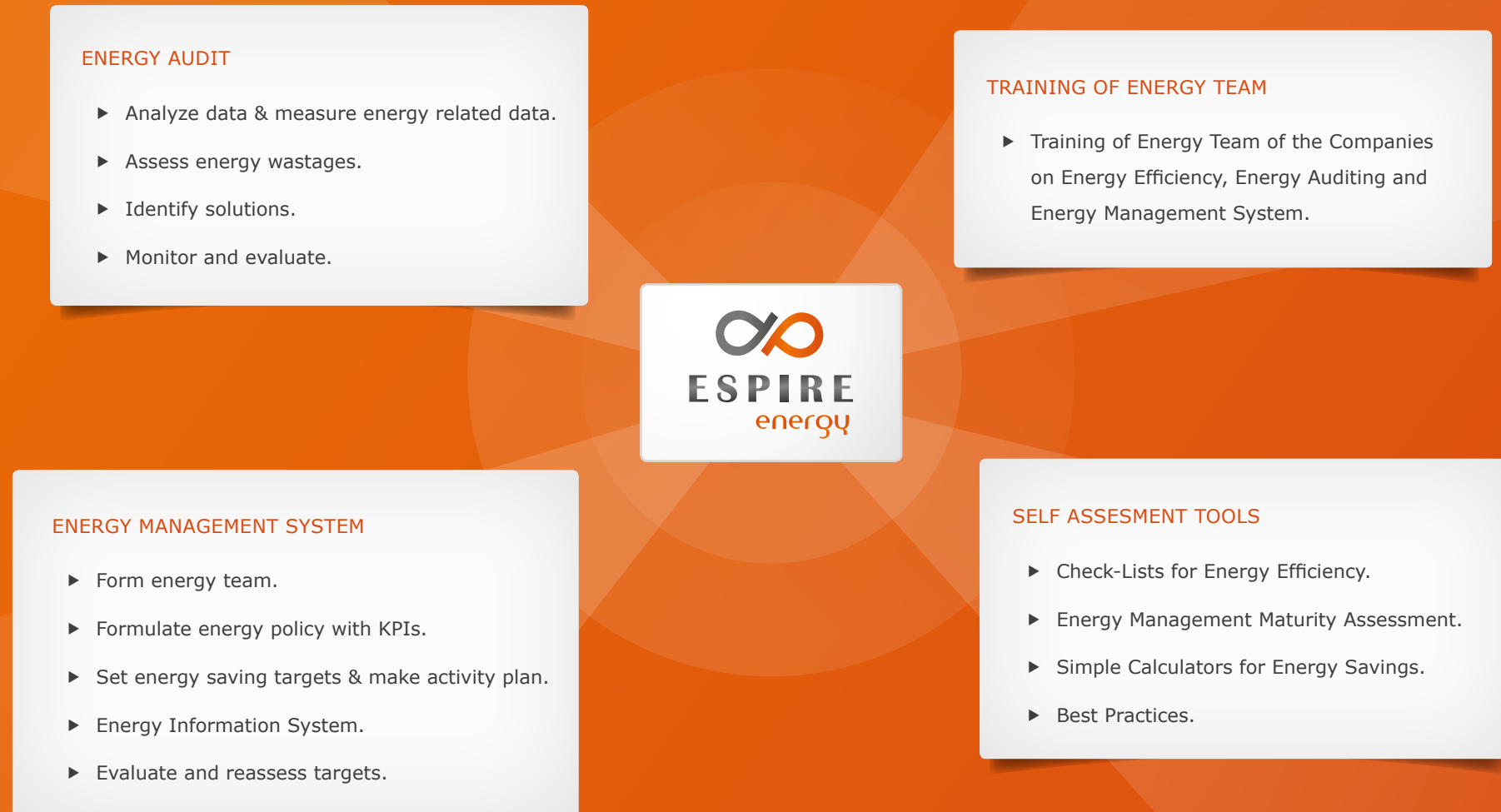


ESPIRE Components for Industry

The support provided by project ESPIRE for the industry consists of two major components: ESPIREnergy and ESPIREgreen. All services are provided through the partnering associations by ESPIRE consultants.



1 ESPIREenergy is a portfolio of services that helps industries to reduce their energy consumption, increase energy security and implement an energy management.

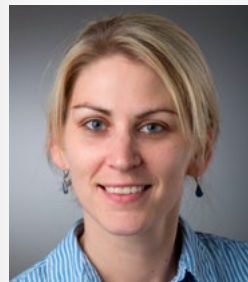


2 ESPIREgreen contains services that support industries to increase their productivity with less consumption of resources, reduced negative environmental impact and with better protection for workers.



Operation of ESPIRE

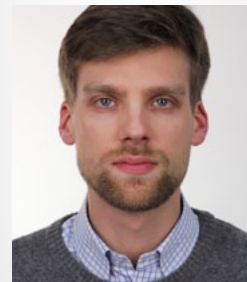
BFZ TEAM GERMANY



BFZ TEAM PAKISTAN



SEQUA TEAM



THE ESPIRE TEAM

The project organization structure was established as follow: From 2009 -2011, the bfz team in Pakistan comprised of a national project coordinator, Mr. Salahuddin Farrukh, and a project manager, Mr. Ahmer Butt in Karachi, for the Sindh Region. In 2011, Mr. Salman Butt took the role of project manager for Lahore, Punjab Region. The International Project Coordinator from bfz, Mr. Martin Strähle, and during consolidation phase Ms. Susanne Ditter, frequently visited Pakistan. Backstopping from the German office in Hof was provided by Ms. Anne Oertel.

Sequa gGmbH managed the control of the project and also reported to the Federal Ministry for Economic Cooperation and Development of Germany. Bettina Müller and Matthias Schöneberger were the responsible project coordinators for Pakistan.

MONITORING SYSTEM

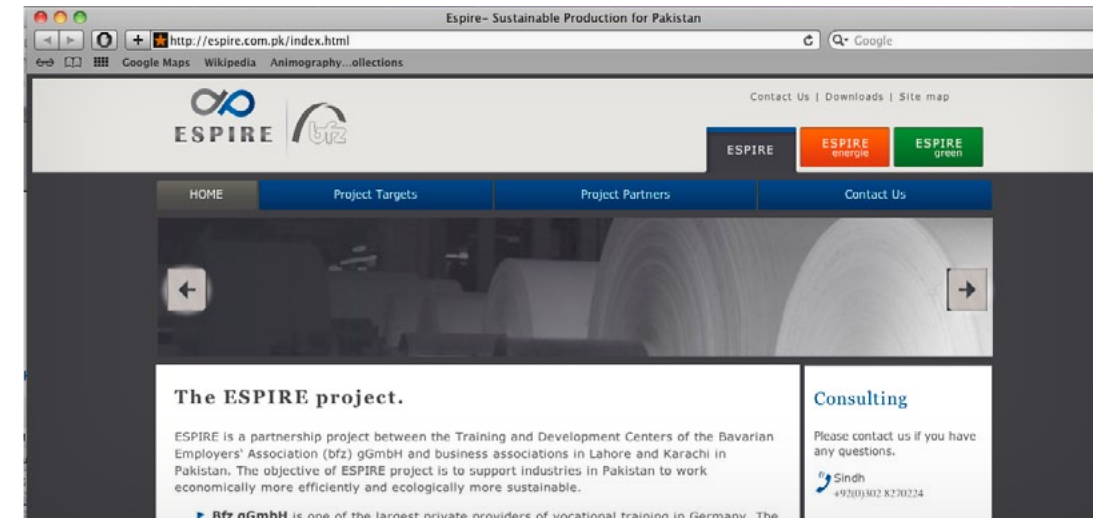
The annual planning events were realized both in Karachi and Lahore once a year. bfz team hosted, moderated and led the thematic and logistical organization of the events. The participants consisted of representatives of the ESPIRE stakeholders. The agenda of the one-day workshops were interactive and collaborative. Project results and indicators were presented, and together the project activities were defined. The project team was then responsible for implementing and monitoring the indicators and reporting to sequa.

Marketing and Dissemination

DEVELOPMENT OF WEB PORTAL

A website www.espire.com.pk was developed to inform the public about ESPIRE and to provide up-to-date information and knowhow on the project, trainings, courses and services being offered.

www.espire.com.pk



SOCIAL MEDIA

A public facebook group was established to inform about the latest events and to function as a sharing platform for people interested in the topics of Energy Efficiency and Cleaner Production.

www.facebook.com/groups/project.espire/



MOVIE

An HD video was prepared that highlights the activities in the field of energy efficiency by project ESPIRE, the methodology and success stories spoken by the entrepreneurs and consultants themselves.



BEST PRACTICES

A lot of effort was put on documenting best practices in each area of intervention. It helps companies to easily understand the benefits of implementing measures related to Energy Efficiency as well as Cleaner Production and to replicate them in their own sphere of work. Some of the practices documented were:

- ▶ Energy Audit Success Stories
- ▶ Energy Management Systems Success Stories
- ▶ Energy Audit for Micro Industries Success Stories
- ▶ Cleaner Production Success Stories
- ▶ Technical Support Cell PHMA and PAAPAM Success Stories

MEDIA EVENTS

Several Media Events were organized in coordination with SMEDA and PHMA starting from 2012. The main purpose of the Press Conferences was to increase outreach of the project and to present the benefits of the project for Pakistani industry. During the Events, success stories of energy efficiency at various factories were presented and it was shown how Pakistani industry benefits by implementing energy saving measures. The results were various articles in local, national and even in the international press.



The News International, Saturday, April 27, 2013

SMEs save Rs61m through energy conservation steps

By our correspondent

KARACHI: Small and medium sized enterprises (SMEs) mostly from textile sector saved an average nine percent of their energy costs, equaling more than Rs61 million, due to energy saving measures implemented in 22 companies since the beginning of 2012, said a statement.

These measures were taken under the project titled ESPIRE, a cooperation project of bfgzGmbH (Germany) with Pakistani business associations and small and medium enterprises development authority (Smeda).

help companies to identify where energy is wasted and support them to reduce the wastages," explained Salahuddin Farrukh, national project coordinator of bfgzGmbH, a largest private provider of vocational training in Germany.

Farrukh added that the achieved savings were monitored for six months and that the factory staff was trained to identify energy wastages.

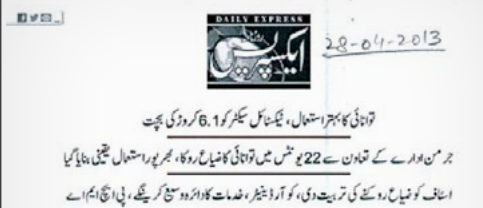
Pakistan Hosiery Manufacturers and Exporters Association (PHMA) – one of the project partners – is working hard to support their members even more and beyond the time of

Bilwani.

He said that the association planned to widen the scope of their services in the near future and asked their entire member textile units to get in contact with PHMA office to take advantage of the services provided.

Project ESPIRE was started by the vocational training and development centers of the Bavarian Employers' Association (bfgz) gGmbH.

In Pakistan, the trainer is co-operating with PHMA, Pakistan Readymade Garments Manufacturers and Exporters Association, Towel Manufacturers Association of Pakistan, Federal-B



کراچی (ڈیس رپورٹر) قومی کے بھرپور استعمال، زیادہ سے زیادہ استفادہ اور ضیاع میں کمی کے ذریعے کوشش سال کے دوران ایس ایم ایف کے شعبے نے 6.1 کروڑ روپے کی بچت کی، ایس ایم ایف کے شعبے سے وابستہ ٹیکسٹائل کے صرف 22 ٹیکسٹائل فیکٹریوں میں بجلی کے ضیاع کو روک کر لوہاس سے زیادہ سے زیادہ استفادہ کے ذریعے قومی اخراجات میں 9 لاکھ روپے کی بچت ہوئی۔ ESPIRE نامی منصوبے کے تحت کراچی، لاہور، فیصل آباد، سیالکوٹ کی صنعتوں نے استفادہ کیا جنہوں نے 3 میگا واٹ کے برابر قومی بچت کی، ملک میں قومی کے بھرپور استعمال کو بچنے جانے کے لیے جرمن ادارے bfgzGmbH کے معاونت سے منصوبہ شروع کیا گیا جس میں قومی کے شعبے کے بین الاقوامی ماہرین نے ملک بھر کے منتخب ٹیکسٹائل اداروں کو معاونت فراہم کی جس سے اداروں کی کارکردگی میں اضافہ اور ان کے اخراجات میں نمایاں کمی ہوئی۔ جرمن ادارے bfgzGmbH میں تحصیل پراجیکٹ کو آرڈینیٹر صلاح الدین فرحان نے بتایا کہ قومی بچت منصوبے میں سرمایہ بھاری کی بھاری بھوری صرف 3 ماہ میں ہی ہوئی تھی۔ انہوں نے بتایا کہ قومی بچت پروگرام کے اس منصوبے کے تحت ماہرین نے کمپنیوں کو قومی کا ضیاع روکنے کے لیے مدد فراہم کی جس کے لیے صنعتوں میں قومی بچت کو فروغ دینا اور ٹیکسٹائل انڈسٹری کے ضیاع کی نشوونما کے لیے فیکٹریوں کے مٹاف کو مطلوب تربیت بھی فراہم کی گئی۔ اس موقع پر پاکستان ہوسری ٹیکسٹائل مینوفیکچررز ایسوسی ایشن کے چیئرمین جلیہ بلوانی نے کہا کہ ان کی تنظیم اپنی رکن صنعت کاروں کو اس منصوبے کے حوالے سے بھرپور مدد فراہم کر رہی ہے اور ان کی انکوائری میں جس ادارے bfgzGmbH کے اشتراک سے ایک ٹیکنیکل سپورٹ سیل بھی قائم کر دیا گیا ہے جو ماحول قومی اور بہتر ہونے کے لیے جدید ترین آلات کے بارے میں تربیت یافتہ افراد کے ساتھ خدمات فراہم کر رہا ہے۔ انہوں نے کہا کہ ایسوسی ایشن نے ذرا کم منصوبے کی قومی سطح پر اہمیت کو مد نظر رکھتے ہوئے اس کے دائرہ کار کو وسیع کرنے کا فیصلہ کیا ہے تاکہ



KARACHI (NDI): Small and medium sized enterprises (SMEs) mostly from the textile sector saved in average 9% of their energy costs with investments that pay back in less than 3 months. These results were achieved through energy saving measures implemented in 22 companies since beginning of 2012 under project ESPIRE – a cooperation project of bfgzGmbH (Germany) with Pakistani business associations and Small and Medium Enterprises Development Authority (SMEDA). The participating factories from Karachi, Lahore, Faisalabad and Sialkot together realized energy savings that equal a production capacity of around 3 MW and are worth more than 61 Million PKR per year. "The consultants we assign help the companies to identify where energy is wasted and support them to reduce the wastages" explains Salahuddin Farrukh, National Project Coordinator of bfgzGmbH the approach. Mr. Farrukh adds that the achieved savings are monitored for six months and that the factory staff is trained to identify energy wastages themselves in the future. Pakistan Hosiery Manufacturers and Exporters Association (PHMA) – one of the project partners – is working hard to support their members even more and beyond the time of the partnership project. "PHMA has established a Technical Support Cell with help of bfgzGmbH to provide services related to Environment, Energy and Production Efficiency with latest measurement equipment and trained staff" informs PHMA Chairman Jawed Bilwani. The PHMA Chairman further explains that the association plans to widen the scope of their services in the near future and asks their entire member textile units to get in contact with PHMA office to take advantage of the services provided. Project ESPIRE was started by the Vocational Training & Development Centers of the Bavarian Employers' Association (bfgz) gGmbH – one of the largest private providers of vocational training in Germany. The International Division of bfgz conducts development cooperation projects on behalf of World Bank, European Union, and the German government in Asia, Africa and Latin America. In Pakistan bfgz gGmbH is cooperating with Pakistan Hosiery Manufacturers Association (PHMA), Pakistan Readymade Garments Manufacturers and Exporters Association (PRGMEA), Towel Manufacturers Association of Pakistan (TMA), Federal B Area Association of Trade and Industry (FBATI), North Karachi Association of Trade and Industry (NKATI), Korangi Association of Trade and Industry (KATI) and Small and Medium Enterprises Development Authority (SMEDA). The Project is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) via Sequa gGmbH.



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MARKETING TOOL KIT

To give the project a formal and professional look, a carefully designed Marketing Tool Kit was developed by a German Designer. Banners, Flyers, website, as well as other marketing and promotional material all had the same corporate design. The marketing material was distributed to all the network partners and can be used by them.



CONFERENCES

During the project several Conferences were organized. They mainly had the objective to raise awareness of current developments regarding "Energy Efficiency" and "Cleaner Production".

- ▶ Workshop on Energy Efficiency and Energy Management for the students of UMT on 8th of July 2013 at UMT.
Participants: 26
- ▶ Together with NUST and SMEDA, ESPIRE arranged a Workshop on "Green Productivity, Renewable Energies and Energy Efficiency in the Industry". The event was held on 21st of September 2013 in Lahore.
Participants: 123
- ▶ Between November and December 2013, the students of UMT were given a series of lectures on Energy Efficiency and Green Productivity by consultants on pool of the project.
Participants: 20
- ▶ Conference on Resource Efficiency with the international guest speaker Dr. Jürgen Hannak on 6th of November 2014, in Karachi.
Participants: 150
- ▶ Seminar on Profitable Chemical Management in Textile Industry on 07th of May 2015 in Faisalabad.
Participants: 30
- ▶ Launching Ceremonies of Self-Assessment Tools in September 2015 at the following Associations: PAAPAM and TMA in Karachi, as well as PHMA and PAAPAM in Lahore.
Total Participants: 60
- ▶ Conference on Occupational Health and Safety with the German guest speaker Olaf Petermann on Return on Prevention on 16th of December 2015 in Karachi.
Participants: 200

3. Support to Project Partners

3.1 BUSINESS ASSOCIATIONS - THE BASIS OF PROJECT ESPIRE

A strong emphasis was put on the organizational development of Associations, in order to improve the environment for small and medium enterprises in the area of Energy Efficiency and Cleaner Production. Trade associations in Karachi along with their northern chapters, as well as town associations in Karachi were included to achieve maximum coverage towards SMEs. The activities highlighted below were important steps towards lobbying/advocacy of the Associations and improving their services in the area of EE and CP for SMEs.

FOCUS GROUPS

As a first step, around 50 Group Consultants were included in the pre-hiring training and screening. 10 were selected after the screening for being interviewed by the Associations. In the end each of the five partnering associations hired one group consultant each and formed the following Focus Groups:

GROUP	PARTICIPANTS	BENEFITS	ASSOCIATION
Focus Group on Energy Efficiency	8	Energy saving Cost saving Trained pool of people Access to new market	APTPMA
Focus Group on OEKOTEX (Training & Certification)	10 (2-3 for Certification)	Value addition to product at reduced cost Access to new Markets	PCMA
Focus Group on Middle Management Training	13	Improved managerial skills Improved communication flow Better resource planning	PRGMEA
Focus Group on Modular Production	7	Value stream mapping in the factories Elimination of non-value adding processes from production line Cost saving through waste reduction	PHMA
Focus Group on EMS Documentation	13	Personnel trained on ISO 14001 documentation Can apply for ISO 14001 Access to new market	PHMA
Focus Group on Energy Conservation & Self Energy Audit	9	Trained pool of personnel on energy audit Cost saving through Energy saving	PRGMEA
Focus Groups on EMP and EMR (2 Groups)	32	Preparation of Environment Management Plan Monitoring of waste and reporting to EPA Compliance to EPA law	TMA

During the first three years, group consultants were financed through the project, but later gradually reduced. The objective was that through the developed services, revenue was created and the group consultant became self-sustaining.

Benefits for companies: Increased capacity of the employers to manage business, process improvement production and product quality, attracting new markets, collaboration between participants of Focus Groups, cost savings from joint activities, business growth with employment generation.

"A FOCUS GROUP ("NUCLEUS") IS A WORKING GROUP CONSISTING OF COMPANIES OF THE SAME SECTOR, WHICH IS MODERATED BY MANAGEMENT CONSULTANT EMPLOYED BY OR UNDER CONTRACT AT A CHAMBER OR ASSOCIATION."

Source: Sequa gGmbH

Focus Group Meetings and Trainings



FORUM OF SUSTAINABLE PRODUCTION

In order to provide a more effective information exchange and a networking vehicle for promoting sustainable production and a concerted representation of the members' interests in public, the Business Associations established the Forum on Sustainable Production. For establishment of this forum, governmental organizations like SMEDA, Trade Development

Authority of Pakistan (TDAP), Textile Commissioner and EPA, as well as business entities (Karachi Chamber, Apparel Forum), and NGOs (LEAD, Sheri), and various consultants were approached.

The forum took place in April 2009 in Karachi.

COMMITTEE APPROACH

In 2010 a new model was started using a bottom-up approach: Under the Steering Committees, the following Sub-Committees were established that together with external advisors did technical ground work and elaborated position papers as basis for a joint lobbying work.

Sub-committee for University Exchange

During a German study trip in January 2010, a Pakistani delegation visited the University of Applied Science (FH Hof) - Department of textiles and design. A joint degree program with one of the leading universities in Pakistan was discussed and therefore a "Sub-Committee for University exchange" was formed to manage this activity. After several activities, unfortunately, the cooperation was put on hold due to security concerns by the University of Applied Science of Hof.

Sub-committee for Renewable Energy

The sub-committee for renewable energy successfully completed feasibility on putting up a demonstration photovoltaic system at PHMA office. PHMA started to install a Solar PV System of 2550 Watts for self-generation of electricity. As it was only producing 50% of their electrical load requirement (excluding Air conditioners and water pumps) with 2 hours backup, it was decided to support PHMA with the upgradation of the System from 2550 Watts to 4590 Watts, to be able to shift on 100% self-generation (excluding Air conditioners and water pumps) with 4 hours backup at full load. The upgradation was successfully completed in December 2015. PHMA is now able to produce 100% Electricity through the

Solar PV system to execute their day to day work. At the same time, it serves as a demonstration system for all member companies and other Associations. The system was installed by the ESPIRE consultants company Energy Saving Solutions (ESS).

Sub-committee for waste water treatment

The sub-committee for waste water treatment completed a position paper on problems of industry to meet National Environmental Quality Standards (NEQS).



CAPACITY BUILDING OF BUSINESS ASSOCIATIONS

To strengthen the capacities of the staff of associations and to improve their skills to manage their operation as a professionally run commercial entity, through ESPIRE project it was shown to them how to develop demand driven services for their member companies and in return earn revenue and ensure sustainability. A lot of emphasis was put on this subject and below are only some of the interventions in this regard.

TRAININGS FOR ASSOCIATIONS

The partner Associations expressed the desire and need for skill development of their board members, as well as for their management. Being in certain routines for years, they wished to gain knowledge on innovative methods and techniques to manage their associations, on new Strategic Planning and on improving their services.

Bfz organized various trainings for capacity building of Associations during the three phases of the project. The topics were mainly on Energy Efficiency, Green Productivity and also management (moderation, Service Provision and Marketing). Most trainings were conducted by international experts, sharing best practices in managing an association as a service provider business organization.

"I PARTICIPATED IN ACTIVITY PLANNING, ATTENDED VARIOUS TRAININGS, SEMINARS & WORKSHOPS ON TOPICS RELEVANT TO TEXTILE INDUSTRY. THE TRAININGS I UNDERWENT POLISHED MY SKILLS. I ENJOYED EACH OF THESE MEMORABLE MOMENTS WHICH WILL NEVER BE FORGOTTEN."

Mr. Arif Ismail, General Secretary at PCMA

EXAMPLES OF TRAININGS FOR ASSOCIATIONS

MANAGEMENT

Trainings of Group Consultants on Moderation and Facilitation

Trainings on Service Development and Provision

Management Training for Chairmen of Associations

Development Course for Managers

Modular Production Trainings

Project Acquisition for Associations

GREEN PRODUCTIVITY

Seminar on CSR and Sustainability Reporting

ENVIRONMENT

Workshop on REACH

Training on OEKOTEX 100 Certification

Training Course on Environmental Management

Training on Energy Conservation

ESTABLISHMENT OF AN ACCREDITED LABORATORY

TMA, as one of the partnering Association of ESPIRE, established an accredited laboratory at S.M.A Rizvi Textile Institute, Karachi with the financial support of bfz. While the project purchased testing equipment, including FTIR-Spectrophotometer and Gas Chromatograph – Mass Spectrometer, TMA, in return, procured support auxiliaries for SMARTI. Once completed, the laboratory will start providing chemical and physical testing for textile industry as a service and will be a major source of revenue for the association.



A SUCCESS STORY

ESTABLISHMENT OF TECHNICAL SUPPORT CELL AT PHMA KARACHI

In November 2011, a Technical Support Cell was established within the Business Association PHMA in Karachi to provide sustainable, reliable and affordable services related to energy, environment, productivity and compliance of social and labor standards to their member companies. By providing services such as Trainings, Technical Testing Services & Consultancy Services PHMA increases its financial sustainability.

To accommodate these services, bfz financially supported PHMA to renovate its existing infrastructure. A Flue Gas Analyzer, Power Analyzer, Lux Meter, Humidity Meter were purchased, as well as a Video Conferencing system. The usage of these systems enables the Association to add services like B2B online trainings and video conferencing on rental basis.

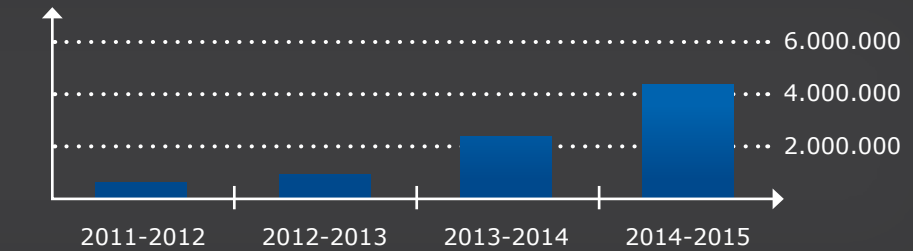
PHMA is now offering the following trainings for its member companies:

- ▶ Energy Manager Training Programs
- ▶ Certification program on Lean Sigma Green Belt
- ▶ Lead Auditor Course on BS OHSAS 18001
- ▶ Lead Auditor Course on QMS, ISO 9001
- ▶ Lead Auditor Course on EMS, ISO 14001
- ▶ Certification Program on IOSH

The Technical Support Cell is marketing its services through a well defined Marketing Strategy, that includes Email (Database), Telephone calls, SMS Service, Social Media (Facebook, LinkedIn) and through its Partner Organizations.

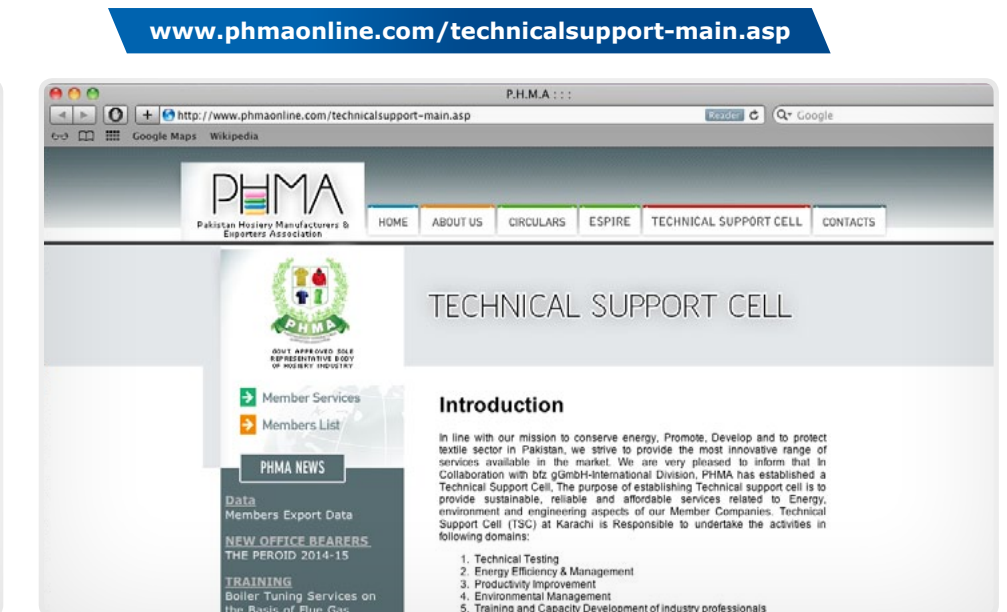
563 Professionals from more than 100 companies have already availed the Training Services offered by PHMA.

Not only companies benefit from these services, but also PHMA themselves: the financial performance of technical Support Cell TSC has increased constantly during the last years, as the table shows



UPGRADATION OF ASSOCIATION WEBSITES

With the support of ESPIRE project, websites of PRGMEA, PHMA and FBATI were upgraded. Information on ESPIRE project and its services were uploaded, as well as success stories. The improvement of the websites increase outreach of ESPIRE services and guarantees its dissemination to Associations' member companies.



STUDY TOURS

Study tour to Brazil for Board Members

In October 2008, a delegation comprising of the 10 board members from five partner associations, were given the opportunity to individually witness the best practices being applied at “Empreender program” in Brazil. “Empreender program” is another partnership project coordinated by bfz and supported by the Federal Ministry for Economic Cooperation and Development of Germany to support the development of SME companies through capacity building of Business Associations. The Pakistani delegation visited chambers and various Brazilian business associations to exchange views on how to develop a service oriented culture within their own associations.

Delegation group at Brazilian Annual Conference

Another delegation of General Secretaries from partnering associations visited the Annual Conference of “Empreender program” in October 2010 in São Paulo, Brazil. During the visit, topics like attention to services, administration and finance and modernization of internal structures of Business Associations were interchanged and discussed.

Study tour to Germany

In 2010, a delegation comprising of chairmen as well as focus group directors of the partnering associations took a study tour to Germany. The trip schedule was specially designed to enable

the delegation to maximize their knowledge of the technologies available in the field of textiles, in renewable energies and waste water treatment, as well as to gain better understanding of how associations are managed in Germany.

The technical visits were combined with a visit to Heimtextil, Europe’s largest trade fair for home textiles.

Regarding the Cleaner Production part, companies specialized in renewable energy, as well as wastewater and sludge treatment were visited. At bfz gGmbH, the delegation group attended a seminar on how associations are managed in Germany.



3.2 CONSULTANTS - THE KEY ELEMENT TO ACHIEVE EXPECTED RESULTS

One of the key stakeholders for the successful implementation of the project results of ESPIRE are its technical Consultants. They contribute with their knowledge, skills, experiences and talents to the success of the project.

“I DID MORE THAN 40 ENERGY AUDITS FOR ESPIRE PROJECT. IT WAS A GREAT EXPERIENCE IN FINDING ENERGY SAVING POTENTIALS, IMPLEMENTATION AND FOLLOW-UP WITH MONITORING.”

Mr. Sajid Mahmood Lakhan, Energy Consultant

THE CONSULTANTS POOL

The project not only sought to introduce procedures, manuals and tools. Rather tried it to develop people through trainings, challenging them and enable them to learn from practical examples. ESPIRE can proudly count dozens of cases of young people who began as freelance consultants during the project. Today they are recognized experts in their area, occupying leading positions in their institutions. Others, carrying time with the consultancy, grew in their professionalism and now lead the young.

The ESPIRE databank offers a repository of reliable and reputed names of consultants, which have undergone a careful screening process and were put through rigorous trainings and assessments to improve both their technical skills, and their soft skills.

SELECTION & APPROVAL PROCESS OF ESPIRE CONSULTANTS

SELECTION OF CONSULTANTS

- ▶ Team Composition
- ▶ Existing Practical Knowledge
- ▶ Proven Work Experience

CAPACITY BUILDING

- ▶ Skill Baseline Assessment
- ▶ Skill Upgradation through Theoretical & Practical Trainings (See the list of Trainings)

APPROVAL OF CONSULTANTS

- ▶ Trial Audits by Consultants
- ▶ Assessment by Bfz and Participating Factories
- ▶ Continuous Supervision & Guidance by Bfz team (See the list of Approved Consultants)

The tables reflect the expertise of ESPIRE consultants, as well as their contact details. Please note, that it only reflects those services that form part of ESPIRE service portfolio. Consultants also offer other services with different focus that are not included here.

APPROVED CONSULTANTS - PUNJAB ZONE

COMPANY	CONTACT PERSON	SPECIALTY	CONTACT INFORMATION
Energy Saving Solution	Muhammad Farooq	Energy Audits Energy Management System Resource Efficiency Chemical Management	farooq.ess@gmail.com 0333 99 25 598
NEC Consultants	Shafqat Ullah	Energy Audits Energy Management System Resource Efficiency Chemical Management	shafqat@pisd.com.pk 0300 94 82 098
Challenge Engineering	Ghulam Qadir	Energy Audits	gqadir@challenge-engg.com 0301 84 33 525
Engicon	Sajid Mahmood	6-Sigma Productivity Improvement Resource Efficiency	sajidme@hotmail.co.uk 0300 45 27 535
Simple Sustainable Solutions	Sajid Mahmood	Productivity Improvement Supply Chain Management Resource Efficiency Chemical Management	sajid@ss-sol.com 0300 84 07 110
SBS Pak	Saif Ullah Farooqi	Occupational Health & Safety	saif.farooqi@sbs.org.pk

APPROVED CONSULTANTS - SINDH ZONE

Company	Contact Person	Specialty	Contact Information
Green Energy Associate	Sajid Mahmood Lakhan	Energy Audits Energy Management System Cleaner Production Productivity Improvement Occupational Health & Safety	sajid@gea.com.pk 0321 21 17 115
Barqtron Engineering Solutions	Danish Zahoor	Energy Audits Energy Management System	danish@barqtron.com 0322 20 01 199
NEC Consultants	Shafqat Ullah	Energy Audits Energy Management System Resource Efficiency Chemical Management	shafqat@pisd.com.pk 0300 94 82 098
Operational Excellence Consulting	Bilquis Yasmeen	6-Sigma Productivity Improvement	BilquisYasmeen@VarianceReduction.com 0300 45 54 149
Future Tech Consulting	Kashif Iqbal Butt	Productivity Improvement Occupational Health & Safety	kashifbutty2k@yahoo.com 0334 30 76 339
Quality International Consultants	Hammad Shamsi	Productivity Improvement Occupational Health & Safety	hammad.shamsi@gmail.com 0331 28 66 263



Saifullah Farouqi
GP Consultant



Sajid Lakhan
Energy Consultant



Sajid Mahmood
GP Consultant



Sajid Mahmood
GP Consultant



Muhammad Farooq
Energy Consultant



Dr. Bilquis
CP Consultant

TRAININGS FOR CONSULTANTS

A number of trainings were conducted for consultants since the year 2011. The trainings covered not only technical aspects of Energy Efficiency and Cleaner Production, but also soft skills to improve their skills as a consultant. Most of the trainings were organized by bfz and conducted by an international consultant. Others were organized by Pakistani consultants.

A special approach of the trainings was the combination of theory and practical implementation. In some trainings, the consultants learnt “on the job” during assessments and trainings in the companies. They were, for instance, requested to submit reports of the successful implementation of Energy Management Systems in companies or had to conduct and report the results of Assessments and Chemical Management measures in companies.

To provide appropriate and relevant trainings and constantly improving the consultant’s skills, it was important to understand the individual needs of the consultants. With the support of the international expert, Mr. Jürgen Hannak, a detailed workshop on the development of training needs for the consultants was carried out. On the basis of individual consultants’ need assessment, Consultants received individual trainings according to their needs and field of work. ESPIRE supported trainings not only in Pakistan, but also certified courses related to Cleaner Production and Energy Efficiency in the neighboring countries such as United Arab Emirates and Thailand.

Tables below highlight only some of the trainings imparted under Energy Efficiency and Green Productivity.

ENERGY EFFICIENCY

TRAININGS FOR CONSULTANS	TRAINER
ESCOs Development Training	Local Consultant
Energy Manager Training in collaboration with GIZ REEE	Local Consultant
Dynamic Investment Calculation for ESCOs	GIZ
Energy Management System	Mr. Thomas Frank, Envidatec Germany
Energy Information System	Mr. Thomas Frank, Envidatec Germany
Certified Energy Auditor, incl. Exam in Dubai	Association of Energy Engineers USA
Lead Auditor Course on EMS ISO 14001: 2015	SGS Academy

“THE OPPORTUNITIES FOR DEVELOPMENT THROUGH ADVANCED TRAININGS AND ON-SITE CONSULTANCY WERE EXCEPTIONAL. THE CONSULTANTS ARE NOW WELL EQUIPPED TO IMPLEMENT ESPIRE’S PROJECT VISION IN FUTURE ENGAGEMENTS.”

Mr. Sajid Mahmood, GP Consultant

GREEN PRODUCTIVITY

TRAININGS FOR CONSULTANS	TRAINER
Cleaner Production Assessment	NCPC Sri Lanka
Green Productivity Assessment	CITEVE Portugal
Cleaner Production through Good Housekeeping (GHK)	Mr. Jürgen Hannak, PREMAnet, Austria
Resource Efficient Management of Chemicals (REMC)	Mr. Jürgen Hannak, PREMAnet, Austria
Certified Supply Chain Professional	LEORON in Dubai
Certification training on Change Management	Mawj Training & Consulting in Dubai
Certified Safety Professional	Safety First – Training and Consultancy
PREMA Good Housekeeping	Salman Butt National PREMA Trainer
Lead Auditor OHSAS Training	Bureau Veritas

SOFT SKILLS

TRAININGS FOR CONSULTANS	TRAINER
Training of Trainers and Consultants	Andreas Dohle, I.D.O. Brazil
Training on Strategy Planning and Project Designing	Andreas Dohle, I.D.O. Brazil



STANDARD OPERATION PROCEDURE

The service portfolio developed by ESIPRE is offered through its consultants. All of them have been trained and approved through the project partners. The implementation of the Portfolio follows a standard operation that all approved consultants follow.

For Energy Audit (EA) / Energy Management Systems (EnMS) and Energy Information System (EIS)

- **Check eligibility:** Interested companies are checked for energy saving potential, management commitment, qualification of technical staff for implementation of identified solution and eagerness to pay fee and to implement identified energy saving solutions.
- **Assign Consultant:** Only Consultants, who are qualified, experienced, trained and approved are appointed to companies to execute projects.

- **Audit & Training:** Consultant visits factories to review and measure data, assess wastages and calculate energy saving solutions. A report with overview of the energy consumption of the factory and recommended solutions is presented to the management of the company. Staff of the company receives training for implementation of identified solutions.
- **Energy Management & Information System:** Consultant supports the company in preparation of an energy management system: Formulation of an energy policy, Energy Performance Indicators, Formation of Energy Team, Setting of energy saving targets etc. and sets up an energy monitoring system.
- **Follow-up:** Consultants supervise implementation of energy saving solutions and monitor realized energy savings for 4 months after conducting Energy Audit and Implementation of Energy Management System.



For chemical management / Productivity enhancement / Resource Efficiency

- **Check eligibility:** Interested companies are checked for potential to improve their production in the areas of material, water and energy usage, productivity, resource efficiency and chemical management. The commitment of the management is verified, as well as the required qualification of technical staff and the willingness to pay the consultant fee and to implement identified saving solutions.
- **Assign Consultant:** Only Consultants, who are qualified, experienced, trained and approved, are appointed to companies to execute projects based on the mentioned products.

- **Assessment:** Based on the interest of the client and the results of the eligibility check an assessment is conducted in which the consultant visits the factory to identify potential for improvements in the respective field. The Consultant presents a report with recommended solutions to the management of the company and guides and monitors the implementation of the identified solutions.
- **Follow-Up:** Consultants supervise implementation of solutions and monitor realized savings for 4 months after conducting implementation of improvement measures.



3.3 SUPPORT TO INDUSTRY: COMPANIES - THE REAL BENEFICIARIES OF PROJECT ESPIRE

Monitoring of energy consumption is the basis for improving energy efficiency and thus reducing energy consumption and energy costs. However, most companies hesitate to invest in energy monitoring as they fear high investment costs. ESPIRE's objective was to show companies how they save money and improve their performance by implementing energy efficiency and cleaner production measures.

INCENTIVE SCHEME REEE

ESPIRE developed an incentive scheme that showcased the reduction of the threshold for investments in energy monitoring. Support for industries was offered that planned to improve their energy monitoring system by installing Energy Monitoring Equipment with co-financing 70% of the total equipment cost, i.e. max. 10.000 € per company (non-refundable grant) and max. 50% of total investment. All industries that planned innovative changes in their factory to improve energy efficiency or to use renewable energies were applicable for funds from project ESPIRE.

The pre-selected equipment for this scheme was:

- ▶ Equipment
- ▶ Power Analyzer
- ▶ Flue Gas Analyzer
- ▶ Compressed Air, Gas Thermal Mass Flow Meter
- ▶ Steam Flow Meter



To ensure transparency and accountability, a third party auditing and evaluation firm's services were utilized to carry out technical and financial feasibility of each proposal within stipulated time period.

All applicant factories were requested to ensure to document all changes and realized savings (kWh, CO2, and Rupees). The collected data and documents related to the implemented measures were shared with ESPIRE for marketing and distribution of REEE.

CUSTOMIZING SOLUTION FOR MICRO FACTORIES

To support micro factories, an energy audit with customized scope and competitive fee for smaller factories with no or very low thermal energy use was developed.

Approach through Clustering

Target group: micro factories, mainly stitching units (and power looms) with electric energy consumption of less than 250 kW and no or very small boiler.

- ▶ Clustering of 3-5 micro companies that were located in one industrial area and assign cluster to one Energy Service Company (ESCO) to make it economically feasible for ESCO to provide this service.
- ▶ Each factory signed a separate contract with bfz/association, who then assigned the ESCO.

Role of Associations

The partnering associations in this programme, PRGMEA and PHMA, coordinated and administrated the provided service by fulfilling the following tasks:

- ▶ Marketing, getting application forms filled
- ▶ Clustering of factories according to size and location
- ▶ Preparing contracts and getting them signed
- ▶ Managing schedule of field visits of ESCOs

TRAININGS FOR FACTORY STAFF

Capacity building was not only provided to Associations and consultants, but also to the industry professionals. For this purpose numerous trainings were conducted by ESPIRE consultants. Two trainings are listed below as examples:

Training on Energy Audit, Karachi (June 2013)

Achievements:

- ▶ Orientation on Green Energy Management Information System for technical staff in factories
- ▶ Introduction to Energy Management System, Energy Policy and Energy Audit
- ▶ Implementation: Trainees were required to submit an Energy Audit Report of their respective factory as instructed by the Trainer after two weeks of Consultants visit.

Energy Manager Training, offered by PAAPAM, (January 2014)

Achievements:

- ▶ Quality staff is capable to identify energy savings potentials in their companies
- ▶ Participants were enabled to reduce energy costs by properly maintaining their energy generation, distribution and consumption facilities
- ▶ Factory Staff learned to measure and document the energy consumption and realized savings

Number of Industry Professionals trained under project ESPIRE

PERIOD	TRAINING CATEGORY		TOTAL
	Energy	Green Productivity	
Phase 2 (2011-2014)	539	183	722
Consolidation Phase (2014-2016)	45	175	220

“THE ENERGY MANAGER TRAINING PROGRAM WAS A UNIQUE PROGRAM IN WHICH COMPLETE PRACTICAL APPROACH WAS ADOPTED WHICH HAS HELPED US TO REDUCE EXTERNAL RELIANCE FOR ENERGY AUDITS.”

Masood Abbas Khan, Director, Al-Hadeed Industries

Trainings conducted as a result of collaboration between Network Partners

TRAININGS	PARTICIPANTS	ORGANIZED BY
Energy Conservation	25	SMEDA & bfz
Energy Manager Training	30	SMEDA
REACH Training	29	PCMA & bfz
Energy Manager Training with Implementation I	27	PHMA Karachi, SMEDA & bfz
Energy Manager Training with Implementation II	13	PHMA Karachi, SMEDA & bfz
Energy Manager Training with Implementation III	21	PHMA Karachi & NEC Consultants
Boiler Efficiency	7	PHMA Lahore
Fire Prevention and Safe handling of Chemicals	48	PHMA SZ & SMEDA
HSE Legal Requirements	12	PHMA Lahore
Productivity Improvement through 5S and Visual Workplace for SMEs	15	SMEDA & bfz
Resource Efficient Management of Chemicals	7	PHMA Lahore
Energy Efficiency Opportunities in Steam Systems	32	SMEDA & bfz
PREMA Good Housekeeping	16	PAAPAM & bfz

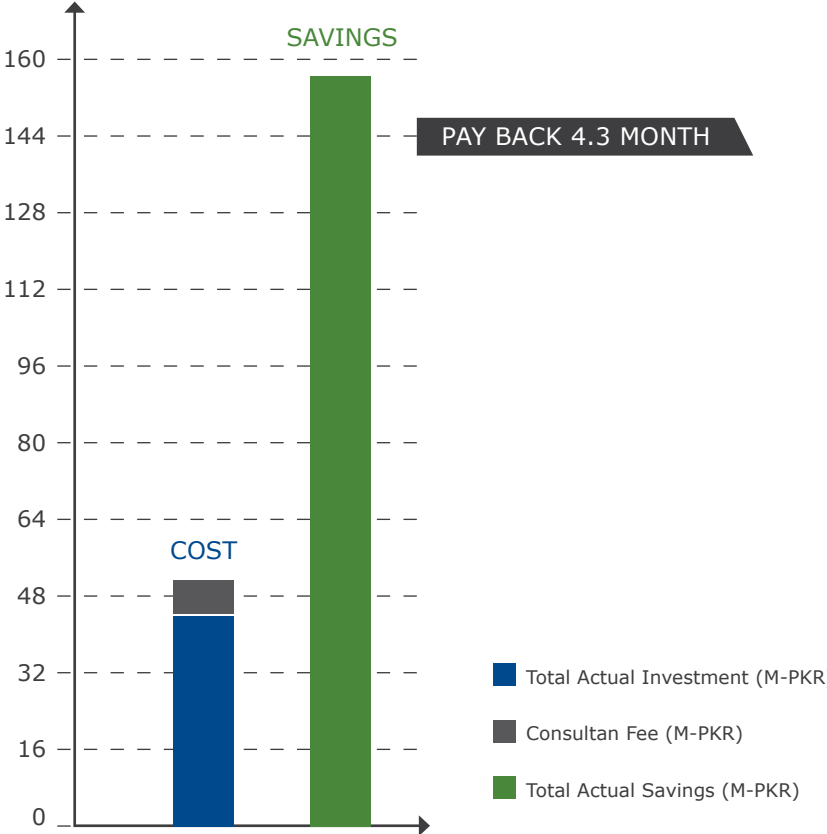
RESULTS ESPIREENERGY

The 105 companies that availed services under ESPIREnergy since 2012 reduced their overall energy consumption in average by 6.7% through measures implemented within first 6 months after the intervention.

DESCRIPTION	RESULTS
No. of Companies (EE)	50 (NZ) + 55 (SZ)
Saving %	6.7%
Implemented Vs Identified Measures	29.2%
Cost Saving	154.0 Million PKR per Year
Investment + Consultants’ Fee	54.44 Million PKR
Pay Back	4.3 Months Micro: 17.34 Small: 9.5 Medium: 4.0 Large: 5.0 X-Large: 12
kWh Saved	7152 + 36849 MWhTh/Year 44.0 Million kWh per Year Equivalent to 6MW Generation Capacity
CO2 Emissions Reduced	30360 Metric Ton CO2

There is a high potential for further savings as only 29.2% of identified energy savings solutions where implemented in this timespan.

The total energy savings of all companies are 7152 MWh per Year and 36849 MWhTh per Year. These sum up to 44 Million kWh per year corresponding to a saving of 154 Million PKR.



RESULTS ESPIREGREEN

A total of 92 companies availed services from ESPIREgreen portfolio. A total of 117 interventions took place, as 25 factories availed support in all three service areas: Cleaner Production, OHS and Productivity Enhancement.

ESPIRE GREEN SERVICES	NUMBER OF SERVICES AVAILABLE*
Cleaner Production	20
Occupational Health & Safety (OHS)	62
Productivity Enhancement (PE)	35

ESPIREgreen services lead to a variety of benefits for industries that are not all directly measurable in monetary terms. Beside direct financial benefits, companies improve occupational safety (e.g. fire safety), reduce environmental impacts (e.g. reduced consumption of chemicals and water) and increase their production efficiency (e.g. improvement of work flow and storage capacities).

"THIS WAS A VERY GOOD EXPERIENCE FOR OUR COMPANY. REDUCED WATER CONSUMPTION AND INCREASED PRODUCTIVITY HAVE BROUGHT US ENORMOUS SAVINGS. WE ARE COMMITTED TO INVEST MORE ON GREEN PRODUCTIVITY IN NEAR FUTURE."

Mr. Zaka Ullah Dogar Director, Rustam Towels Pvt. Ltd.

LAUNCH OF ADVANCE COURSE





To support the industry to gain more knowledge on Energy Efficiency an Advanced Environmental Management Course was developed in co-operation with Karachi University and launched at partnering institute, S.M.A.R.T.I. Two batches of 15 participants were co-financed through the project.



SMALL TOOLS FOR SELF ASSESSMENT





During the last phase, Small Self- Assessment Tools were developed by ESPIRE Consultants. In total, nine Self-Assessment tools on Energy Efficiency and OHS were designed to help industry measure and improve their energy and OHS performance.

The Energy Efficiency tools calculate the energy efficiency of a company and estimate potential energy and cost savings. The results generated by these tools are estimated based on models and help to determine which equipment or practices are worth pursuing to reduce energy consumption.

-  **TOOL FOR PUMPING SYSTEMS**
Conduct a Self-Assessment of your Pumping System to calculate Energy Performance of Pumps and Energy Saving Potentials.
-  **TOOL FOR BOILERS AND STEAM SYSTEMS**
Conduct a Self-Assessment of your Boilers and Steam System, and calculate Energy Performance of your Boilers and Energy Saving Potentials in your System.
-  **TOOL FOR MOTORS**
Conduct a Self-Assessment of your Motors and calculate Saving Potentials through Replacement of Motors and/or installing Variable Speed Drives.
-  **TOOL FOR COMPRESSED AIR SYSTEMS**
Conduct a Self-Assessment of your Compressed Air System to calculate Energy Performance of Compressors and Energy Saving Potentials.

All Self Assessment Tools are free of cost and can be downloaded from following websites:

- www.espire.pk.com
- www.towelassociation.com/tools-for-energy-efficiency.php
- www.smeda.org

-  **TOOL FOR CALCULATING COST OF ELECTRICAL ENERGY MIX**
Calculate the total costs of your individual electrical energy mix, based on the different energy sources that your company uses: grid power, diesel generator and gas generator.
-  **ENERGY MANAGEMENT MATURITY MATRIX**
The Energy Management Maturity Matrix is based on Performance Levels defined in accordance with the Energy Management System ISO 50001. The Matrix helps you to assess the level of implementation of the energy management system in the company and identify areas where further development and consideration is required.
-  **CHECKLISTS FOR SELF ASSESSMENT**
This tool unites several Checklists that help you to conduct a Self-Assessment of your existing systems and performances.
-  **MAXIMUM DEMAND INDICATOR (MDI) MANAGEMENT TOOL**
Investigate opportunity of reducing the MDI of your company by improving Load Management of utilities and processes at shift start-ups and/ or while connecting to grid power supply.

SUCCESS STORIES

To replicate the knowhow that was developed during the project, several success stories were documented. In total 13 companies, representing each sub-sector of Textile SME's, volunteered to document their success story in order to share their experiences.

SUCCESS STORIES ESPIRE ENERGY.

- ▶ Energy Manager Training for Capacity Building of Industry Professionals.
- ▶ M/s Combined Fabrics – Save more by re-investing the savings.
- ▶ M/s Delta Garments – Reducing Energy Share in Manufacturing Cost.
- ▶ M/s Infinity Engineering Pvt. Ltd. – Pioneering ISO50001 in Pakistan.
- ▶ M/s Asli Pari – Business Leader in Sewing Threads And Energy Saving.
- ▶ M/s Metrotex Industries– Decades of knitted & Woven Export business.
- ▶ M/s Rajby Industries – Continuous Improvement Assures Success.
- ▶ M/s Soorty Enterprises – Energy Efficiency is Way Of Life. Successes



Improved Light Management at Stitching Floor in Metrotex industries



Improved Welding Process at Al-Hadeed Industries

STORIES ESPIRE GREEN

- ▶ M/s Rustam Towel – Saving Environment and Reducing Cost.
- ▶ M/s AB Mauri Pakistan – High Gains through Variance Reduction
- ▶ M/s "PFI" reduces material spillage through Lean Six Sigma
- ▶ M/s Al-Hadeed Industries – Increasing Productivity, Reducing Costs
- ▶ M/s Multinational Export Bureau – Reducing Rework, Increasing Profits

By summarizing all the beneficiaries experiences, the companies realized the importance of efficiently managing the energy inputs and resources. This opened new avenues for them to innovatively solve operational issues and helped them upgrading the skills of their manpower. All of them agreed that sustained effort toward increased energy and resource efficiency is required to remain competitive and cost effective.

Here, we present only one example of Success Story. All other success stories can be downloaded from www.espire.com.pk

A SUCCESS STORY

M/S INFINITY ENGINEERING PVT. LTD. – PIONEERING ISO50001 IN PAKISTAN

Background

M/s Infinity Engineering Pvt. Ltd. is an ISO50001, TS16949, ISO9001 and ISO14001 certified company mainly oriented in subcontracting activities for Grey Casting, Hot Forging, Precision Machining and Heat Treatment of automotive and engineering components. The company produces international standard engineering and automobile components for major vehicle assemblers in domestic and international markets.

ESPIRE Intervention

In April 2013, Mr. Abdur Razzaq Gohar, CEO, requested bfz for support with the implementation of ISO50001 Energy Management System Standard at Infinity Engineering through services offered by ESPIREnergy.

The services of Mr. Thomas Frank, who is an expert on Energy Management and Monitoring, were hired for the purpose by bfz. Mr. Frank along with a group of local consultant of ESPIREnergy conducted two sessions in April and June 2013 and started the implementation of ISO50001 with Training of Energy Team. An action plan for implementation of standard with targets was developed in first session. Training on energy monitoring was provided in second session and metering and measurement plans were deliberated.

Achievements

The company formed an Energy Team to implement Energy Management System as per ISO 50001 requirements and guidelines. Major investment was made in developing an Energy Monitoring System that included installation of energy meters for all significant energy uses.

"As a responsible Pakistani industrialist we have to take systematic measures to conserve power in all our business and production processes, making our products competitive and contribute in saving the precious national resource of energy for use of our other country fellows and maintaining a cleaner environment."

Mr. Abdur Razzaq Gohar
CEO, Infinity Engineering Pvt. Ltd.

The efforts of the Energy Team finally paid off in February 2016 when Infinity Engineering became the first Pakistani company certified on ISO50001 Energy Management System.

In addition to implementation of standard, the company has taken aggressive measures to improve their energy performance.



Compressed Air Management System

4. Sustainability

The envisaged role of each Stakeholder of the project is to take on the project as their own and initiate and lead the activities by collaborating with other network partners and entities, also after completion of ESPIRE project in May 2016.

All of the here mentioned partners play a pivotal role to keep up the good work started during the last years:

The **Associations** will continue to be the major platform from where the consultants on the pool can use their delivery mechanisms and reach out to new companies. They have established Technical Support Cells and have widened their network to offer professional services related to Energy Efficiency and Cleaner Production.

Consultants are the technical staff to implement the measures and advise the companies. It was heartening to see that Consultants started using Project ESPIRE as their banner and marketed on their own and converted this into commercial business. They have gained plenty of experience during the last years and are prepared and eager to deliver their services to companies.

Last, but not least, **Pakistani Industry** is the real change maker in the successful continuity of the project. Hopefully, more companies join the good example of the companies that have participated in project ESPIRE, remembering that implementing Energy Efficiency and Cleaner Production measures, will benefit them also economically.

We hope that the drive that we've experienced during the last years of implementation of ESPIRE continues and more associations, companies and consultants will join in and continue the success story of project ESPIRE.

“ENERGY CONSERVATION IS IMPORTANT FROM MANY DIFFERENT PERSPECTIVES AND NOT JUST BECAUSE SAVING ENERGY MEANS SAVING OUR MONEY BY LOWERING OUR MONTHLY ENERGY BILLS. BY REDUCING OUR ENERGY NEEDS WE ARE ALSO REDUCING THE GLOBAL LEVEL OF GREENHOUSE GAS EMISSIONS THAT CONTRIBUTE TO CLIMATE CHANGE AND GLOBAL WARMING. THE COMPANIES PARTICIPATED IN THE PROJECT EXPERIENCED SIZEABLE SAVINGS IN TERMS OF REDUCED CONSUMPTION OF ELECTRICITY, GAS, DIESEL, WOOD AND STEAM.”

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LIST OF ABBREVIATIONS

APTPMA	All Pakistan Processing Mills Association
Bfz	Beruflichen Fortbildungszentren der Bayerischen Wirtschaft
gGmbH CP	Cleaner Production
CPI	Cleaner Production Institute
EA	Energy Audit
EE	Energy Efficiency
EIS	Energy Information System
EMP	Environmental Management Plan
EMR	Environmental Monitoring Reports
EnMS	Energy Management System
ESCO	Energy Service Company
FBATI	Federal B Area Association of Trade and Industry
GIKI	Ghulam Ishaq Khan Institute of Engineering Sciences and Technology
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IKTK	Institute of Knitwear Technology Karachi
KESC	Karachi Electric Supply Corporation
KATI	Korangi Association of Trade and Industry
KU	University of Karachi
LEAD	Leadership for Environment and Development
NGO NEQS	National Environmental Quality Standards
NKATI	North Karachi Association of Trade and Industry
NTU	National Textile University
NUST	National University of Sciences and Technology
OHS	Occupational Health and Safety
PAAPAM	Pakistan Association of Automobile Parts & Accessories Manufacturers
PCMA	Pakistan Cloth Merchant Association
PHMA	Pakistan Hosiery Manufacturers' and Exporters Association
PRGMEA	Pakistan Readymade Garments Manufacturers' and Exporters Association
PRGTTI	Pakistan Readymade Garments Technical Training Institute
Sheri	Citizens for better environment
NGO SITE	Sindh Industrial Trading Estate
SMARTI	SMA Rizvi Textile Institute
SME	Small and Medium Sized Enterprises
SMEDA	Small and Medium Enterprises Development Authority
TDAP	Trade Development Authority of Pakistan
TMA	Towel Manufacturers Association of Pakistan
UET	University of Engineering and Technology, Lahore

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PROJECT ESPIRE

The Federal Ministry for Economic Cooperation and Development of the Federal Republic of Germany supports institutional development projects worldwide between chambers and business associations with their counterparts in Germany, in favour to support the development of SME companies.

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