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FLOVEL Company
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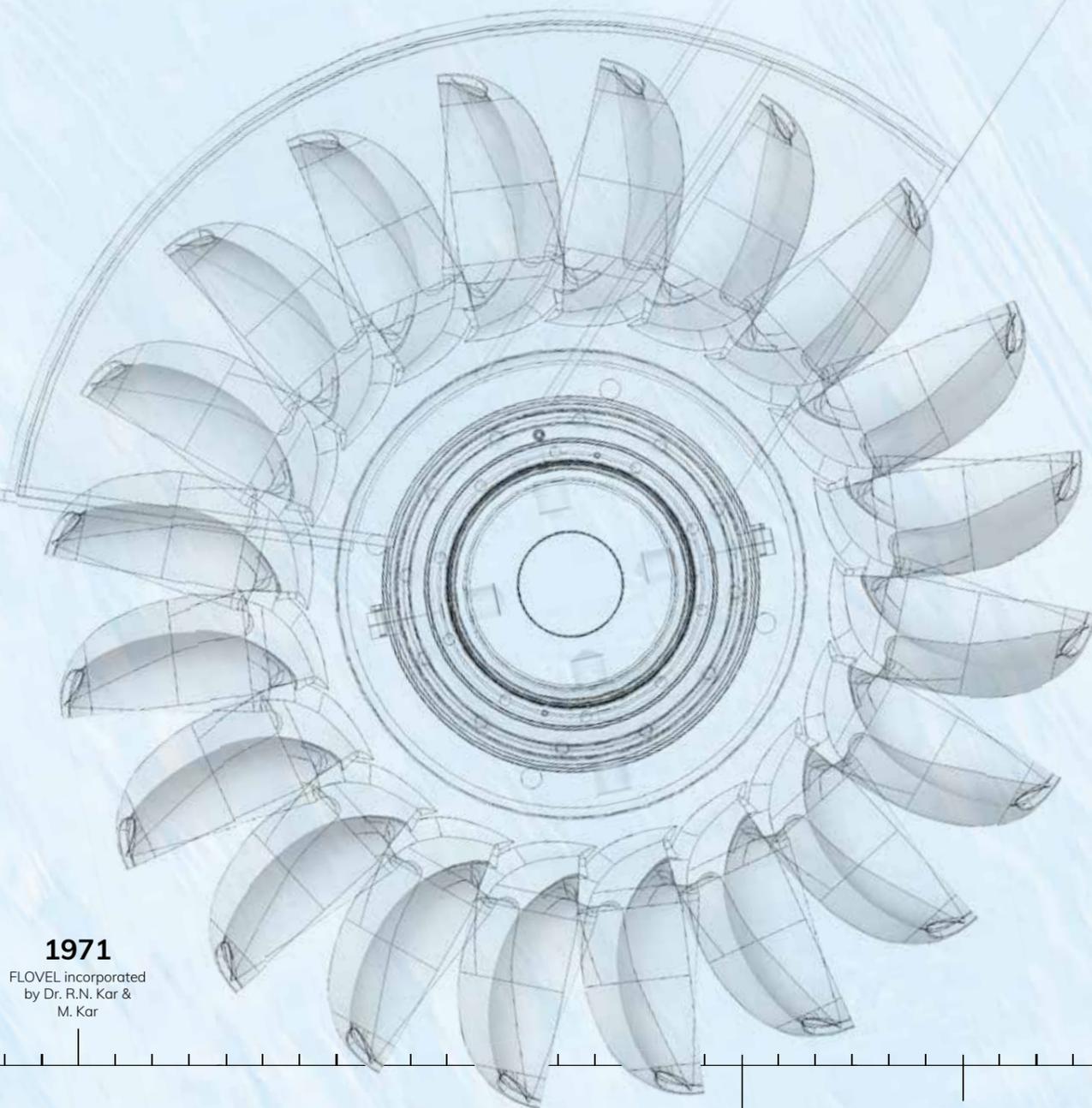


LET'S TURN THE WHEEL OF TIME

FLOVEL is celebrating 50th anniversary.
Come with us on a journey full of challenges.

Let's turn the WHEEL OF TIME

We are very proud to celebrate our 50th anniversary.
Our journey leads us through many decades of
opportunities and challenges.



1971
FLOVEL incorporated
by Dr. R.N. Kar &
M. Kar

1989
Collaboration, Tempella,
Finland

1995
JV – Sulzer Hydro
Sulzer FLOVEL Hydro Ltd.

2000
VA Tech acquires Sulzer Hydro
VA Tech Escher Wyss FLOVEL Ltd.

2006
NEW ERA
FLOVEL

2007
Nam Chien 2,
2 x 16 MW, Vietnam

2008
Completion of
state-of-the-art
manufacturing
facility

2009
Technical
collaboration
with Karsbol
Consulting
AB, Sweden

2010
JV with TB Hydro,
Poland for valves
manufacturing

2011
Eglençe 1 & 2,
72 MW,
Turkey
NH2,
2 x 26 MW,
Vietnam



It is a privilege for me to be a part of the entire 50 years of FLOVEL journey.

My father Dr. R. N. Kar the founder of FLOVEL left the security and trappings of a high-ranking government of India public sector job in the year 1969 to pursue his dream, which was far ahead of its time. Immediately after my graduation as a mechanical engineer, FLOVEL was born in the year 1971 and I jumped into the band.

Major milestones and events of this journey have been dealt in reasonable details in the rest of the sections of this special edition magazine. The strength of FLOVEL all along this journey has been its prime focus on customer by offering quality products / services with the skills and commitment of its human resources.

I believe that there can be no message for all times in the future as it has to adapt to the prevailing dynamic conditions. We cannot be anchored to the past and the challenge is to get new ideas to keep the company fresh and energetic on a continuous basis.

The fundamentals of staying ahead on technology, efficient and cost competitive manufacturing, keeping the skills of the human resources at high levels and looking for diversification into allied products will however always be there to follow.

I would like to express that the love and passion for the work in FLOVEL has kept me motivated for this long tenure inspite of all the challenges and believe that it has evolved me personally.

Maharaj Kar
Chairman



**F
LO
VE
L**

2017

Nam Cum 4, 2 x 27 MW,
Vietnam

2015

Erevan, 2 x 25 MW,
Armenia
Sholayar, 3 x 19 MW,
India

2019

FLOVEL moved
into a new,
modern office

2016

Implementation of
ERP package (SAP)
Shanan, India,
1 x 50 MW

2021

Expansion of factory



2018

Suoi Sap 2A, 2 x 33 MW,
Vietnam

new HYDROS

Right at the beginning of this issue, we would like to give you a short overview of new projects, events and interesting facts about the hydropower market and FLOVEL. We hope that these newsflashes are an interesting and entertaining start to our new customer magazine.

Alin B2 HPP (2 x 10 MW + 15% COL) Thua Thien Hue Province

This project was commissioned and synchronized to the grid on 24 April, 2019 and the plant is under commercial operation.



The scope of supply includes design of equipment of the plant, manufacturing supply, installation, supervision and commissioning of the Vertical Francis Turbines, main inlet valves, generators, main transformers, auxiliary equipment, indoor electrical equipment, outdoor 110 kV switchyard equipment, as well as control and protection systems.

Project Parameters

- » Location: Thua Thien Hue Province, Vietnam
- » Type of water Turbines: Vertical Francis
- » Installed Capacity: 2 x 10 MW + 15% COL
- » Rated Head: 116 m

Commissioning of Pa Hu HPP (2 x 13 MW + 15% COL) in Yen Bai, Vietnam



The commissioning of Pa Hu HPP is an important milestone for FLOVEL being highest output Horizontal Francis machines commissioned by FLOVEL till date. The smooth commissioning and excellent operational parameters are a testimonial of FLOVEL's robust and reliable technology.

Project Parameters

- » Location: Nam Cuom Commune, Van Chan District, Yen Bai Province, Vietnam
- » Type of water Turbines: Horizontal Francis
- » Installed Capacity: 2 x 13 MW + 15% COL
- » Rated Head: 231.48 m

New machine Doosan



The new PUMA 4100/5100 from DOOSAN is roaring at our machine shop. Once the target gets fixed within the centers, the special tools act like the jaws of the wild cat to tear apart any unwanted material by turning, milling, drilling and tapping.

CORONA PROJECTS

The commissioning of these projects is extra special as the commissioning-time was, when the world was fighting against COVID-19 and most of the nations (including India and Vietnam) were under lockdown.



Nam Ban 1 HPP (3 x 3.15 MW) Lai Chau, Vietnam

It is FLOVEL's second remotely commissioned project, the first during the pandemic.

In order to meet customer's deadlines, FLOVEL honored customer's special request and took up an extra-ordinary challenge to commission the project with remote online support from India in coordination with very limited resource and manpower physically available at site. Finally, it was commissioned and synchronized to the grid on 5 August, 2020.

Project Parameters

- » Location: Nam Ban Commune, Nam Nhun District, Lai Chau Province, Vietnam
- » Type of water Turbines: Horizontal Francis
- » Installed Capacity: 3 x 3.15 MW
- » Rated Head: 106.01 m



Ngoi Phat Expansion HPP (1 x 12 MW + 10% COL)

This project was commissioned and synchronized to the grid on 26 April, 2020.

This project will always be treated as a benchmark as when all our competitors were struggling with their projects, our team made the commissioning possible against all odds.

Project Parameters

- » Location: San Bang Hamlet, Ban Vuoc Commune, Bat Xat District, Lao Cai Province, Vietnam
- » Type of water Turbines: Vertical Pelton 4 Jets
- » Installed Capacity: 1 x 12 MW + 10% COL
- » Rated Head: 289.40 m

Akinci II Hydro Electric Project (2 x 3.6 MW)



Erection of equipment started in October 2018. FLOVEL has retrofitted earlier supplied governor panels with latest governor modules, as the earlier supplied modules/make are outdated. We are proud of entire FLOVEL team for smooth execution of the project with our first Open "Pit Type Kaplan" project.

Project Parameters

- » Location: Kayseri, Turkey
- » Type of water turbines: Open "Pit Type Kaplan Turbine"
- » Installed Capacity: 2 x 3.6 MW
- » Rated Head: 6.39 m



FaroArm Coordinate Measuring Machine (CMM)

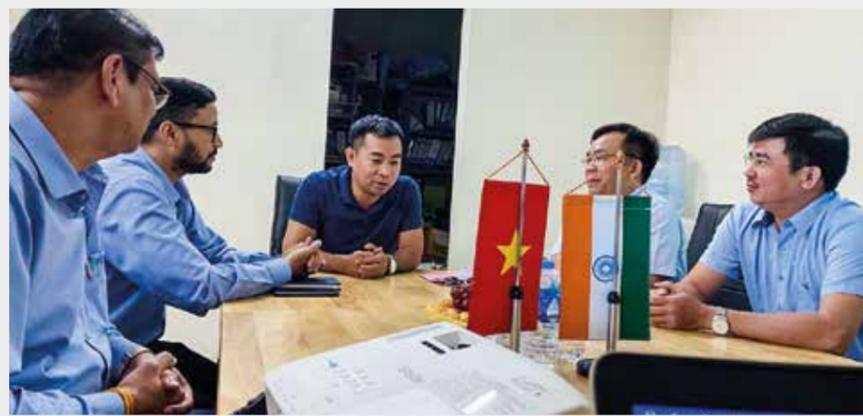
In its endeavor to provide high quality products to its customers FLOVEL has recently acquired state of the art FaroArm. The FaroArm is a portable coordinate measuring machine (CMM) that allows easy verification of product quality by performing 3D inspections, tool certifications, CAD comparison, dimensional analysis, reverse engineering, and more. The ScanArm, in addition of the FARO Laser Line Probe to the FaroArm adds unparalleled non-contact 3D scanning capabilities for detailed measurement of surface form, making the ScanArm the perfect

combination of a contact and non-contact portable CMM. The FaroArm will be used for accurate inspection of Pelton, Francis, Kaplan and Axial Flow Turbine Runners, Wicket Gate Profiles which have complex geometry. FaroArm with its latest Laser Line probe V6 with seven axis movements accomplish such measurements in quickest possible time with very high accuracy. Additionally, the FaroArm with its Laser Line Probe is a perfect tool for reverse engineering and measurement for service and rehabilitation jobs.



Eighth project in the Northwest region of Vietnam

Project:	Suoi Linh HPP (2.6 MW + 20% COL), Horizontal 3 Jet Pelton, 207.22 m)
Customer:	Suoi Linh Hydro Power Joint Stock Company
Project Location:	Tan Uyen District, Lai Chau Province, Vietnam
Date of Award:	July 2020
Date of Completion:	May 2022



Project:	Nam Long HPP (2 x 4.5 MW +10% COL, Horizontal Francis, 37.2 m)
Customer:	Avico Vietnam Joint Stock Company
Project Location:	Krong No District – Dak Nong Province, Vietnam
Date of Award:	August 2020
Date of Completion:	April 2022
	» Developer: Dak Nong Power Investment and Management Joint Stock Company
	» EPC Contractor: Avico Vietnam Joint Stock Company



Seventh project in Nam Nhun District, Vietnam

Project:	Hua Bun HPP (2 x 5.6 MW, Horizontal Francis, 208.17 m)
Customer:	IDCC Joint Stock Company
Project Location:	Nam Nhun District, Lai Chau Province, Vietnam
Date of Award:	June 2020
Date of Completion:	December 2021

Deepawali festival

Deepawali festival was celebrated by organizing a "Joy of Giving Week" (donation drive) amongst employees for the poor and differently abled people by contributing warm clothes, school supplies, dry ration, etc. The donation collected was handed over to "Chetna Welfare Society, Faridabad" (NGO).



Project:	Hakusui (1 x 0.297 MW + 4% COL), Horizontal 2 Jet Pelton, 106.6 m
Customer:	JAG Seabell Co. Ltd.
Project Location:	Japan
Date of Award:	July 2020
Date of Completion:	February 2022

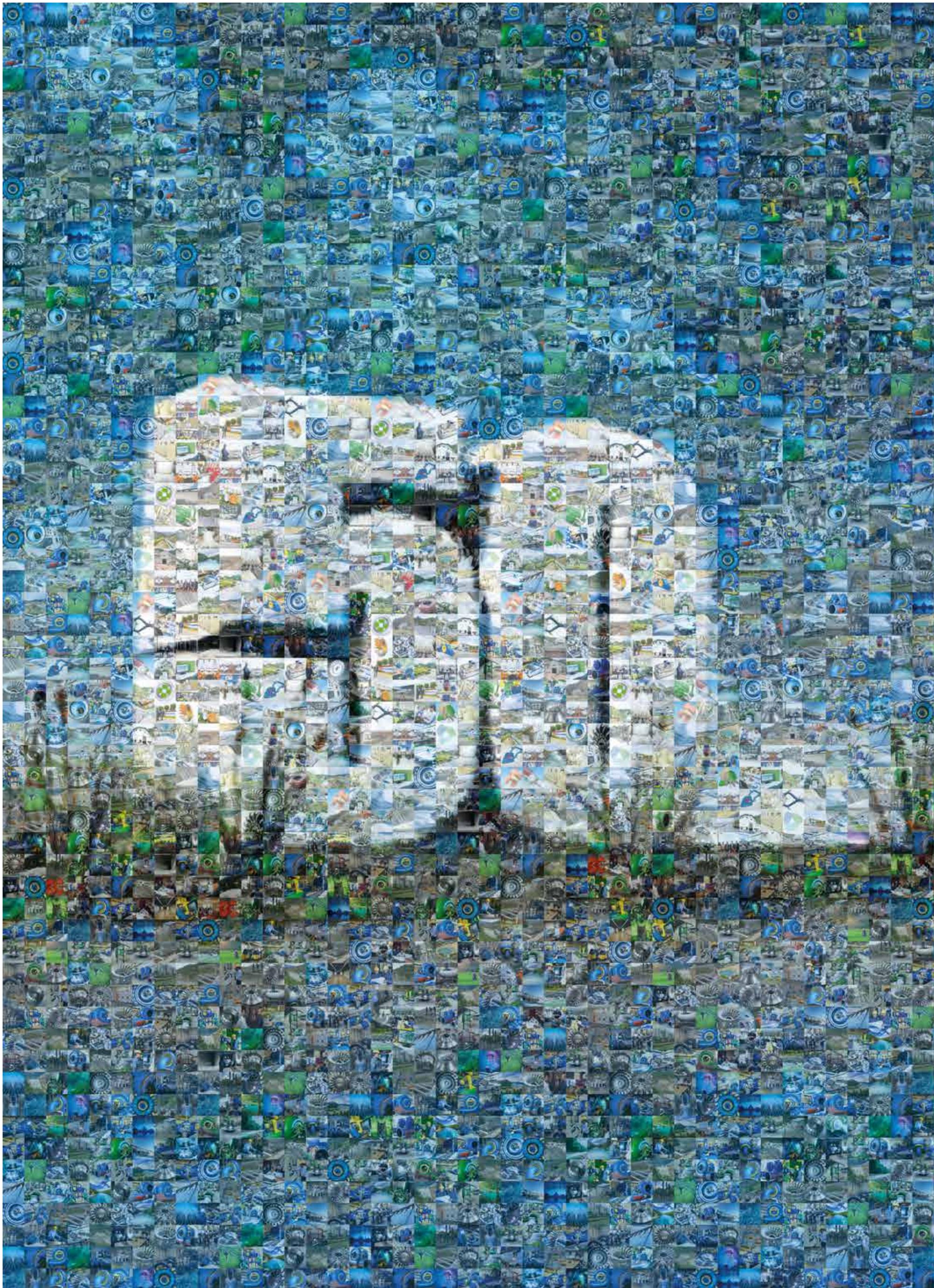
HR department's measures regarding Corona Virus

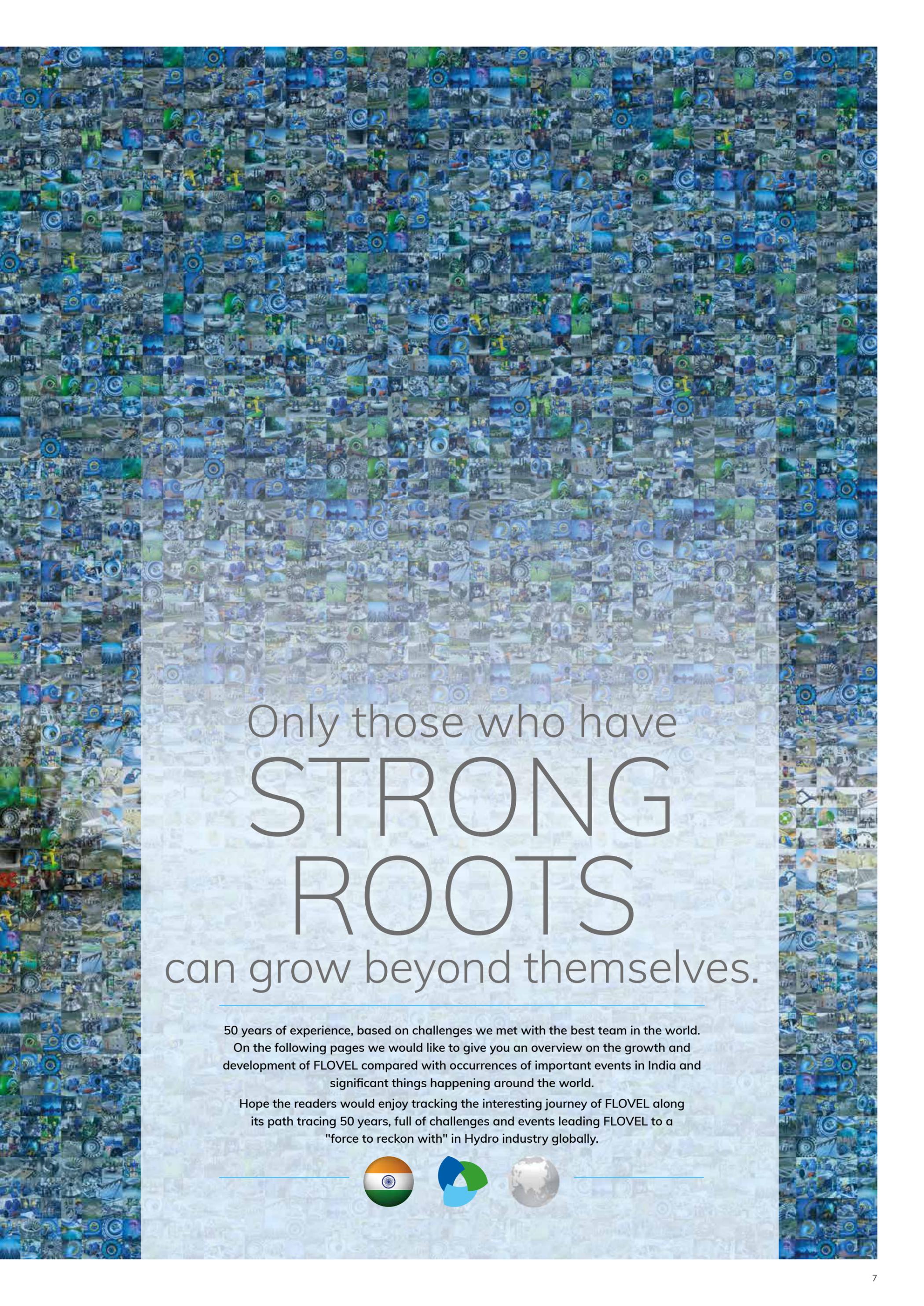
While adhering to the directives/guidelines issued by MHA and state government from time to time, FLOVEL has taken all necessary preventive measures and due care to ensure safety of its employees. Proactive and timely launch of COVID-19 SOP's.

Regular announcements and training regarding precautions/preventions to contain COVID-19 with the purpose to increase awareness on the pandemic are being conducted. Addressing employee's health and safety concerns at workplace along with strict adherence to safety measures (thermal scanning, physical distancing), ample provision of sanitizers, face masks, hand soap, etc. at workplace was done on priority.

The company organized an appreciation ceremony named "Corona Warriors" for the employees who supported in crucial tasks (at office/factory and sites) during countrywide lockdowns.







Only those who have
**STRONG
ROOTS**
can grow beyond themselves.

50 years of experience, based on challenges we met with the best team in the world.
On the following pages we would like to give you an overview on the growth and
development of FLOVEL compared with occurrences of important events in India and
significant things happening around the world.

Hope the readers would enjoy tracking the interesting journey of FLOVEL along
its path tracing 50 years, full of challenges and events leading FLOVEL to a
"force to reckon with" in Hydro industry globally.





The third Indo-Pakistani war of 1971 concluded with **Pakistan signing the instrument of surrender** in Dhaka on 16 December, 1971.

Map: © mapsofindia.com

Manipur, Meghalaya and Tripura became states in 21 January, 1972 making total states in India as 23.

TV-broadcast started in India with service from Mumbai in the same year.

Indian banks were nationalized and many other socialist economic and industrial policies were enacted.

India's first artificial satellite was launched on 19 April, 1975 from Kapustin Yar, a Russian rocket launch.



Sholay, biggest Bollywood blockbuster, was released and established Amitabh Bachchan as new face of Indian cinema.



First Indian satellite, Aryabhata, built by ISRO (Indian Space Research Organisation), was successfully launched in collaboration with the USSR.

State of emergency was declared under the constitution on 25 June, 1975, which allowed the central government to assume sweeping powers to defend law and order in the nation. This emergency was withdrawn on 21 March, 1977.

India announced a **20-point program**, which enhanced agricultural and industrial production, increasing national growth, productivity and job growth. Small Hydro was also included under priority sector.

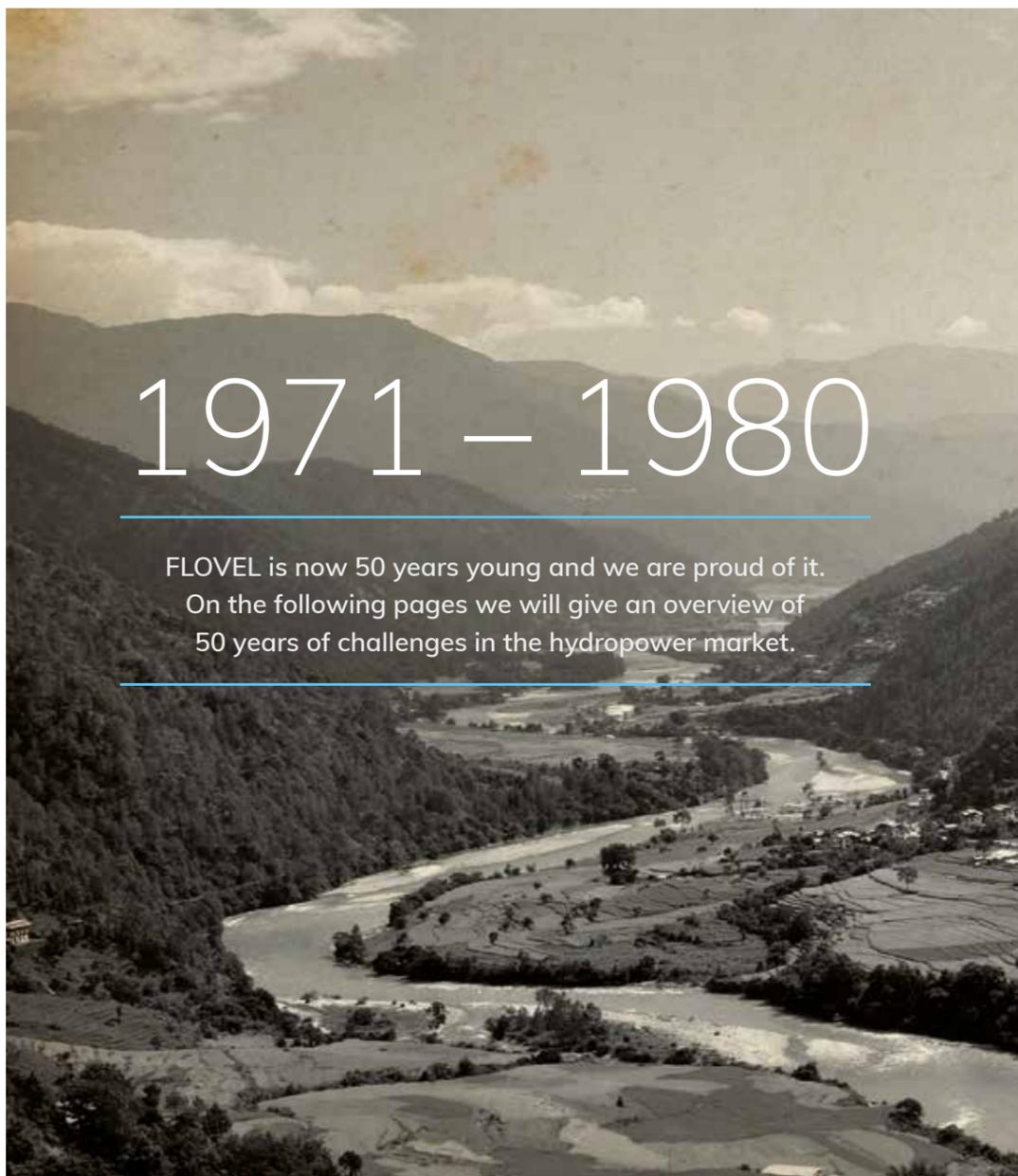
The Indian hockey team won **gold in the Olympics** in 1980.

Photo: The Hindu Archives



1971 – 1980

FLOVEL is now 50 years young and we are proud of it. On the following pages we will give an overview of 50 years of challenges in the hydropower market.



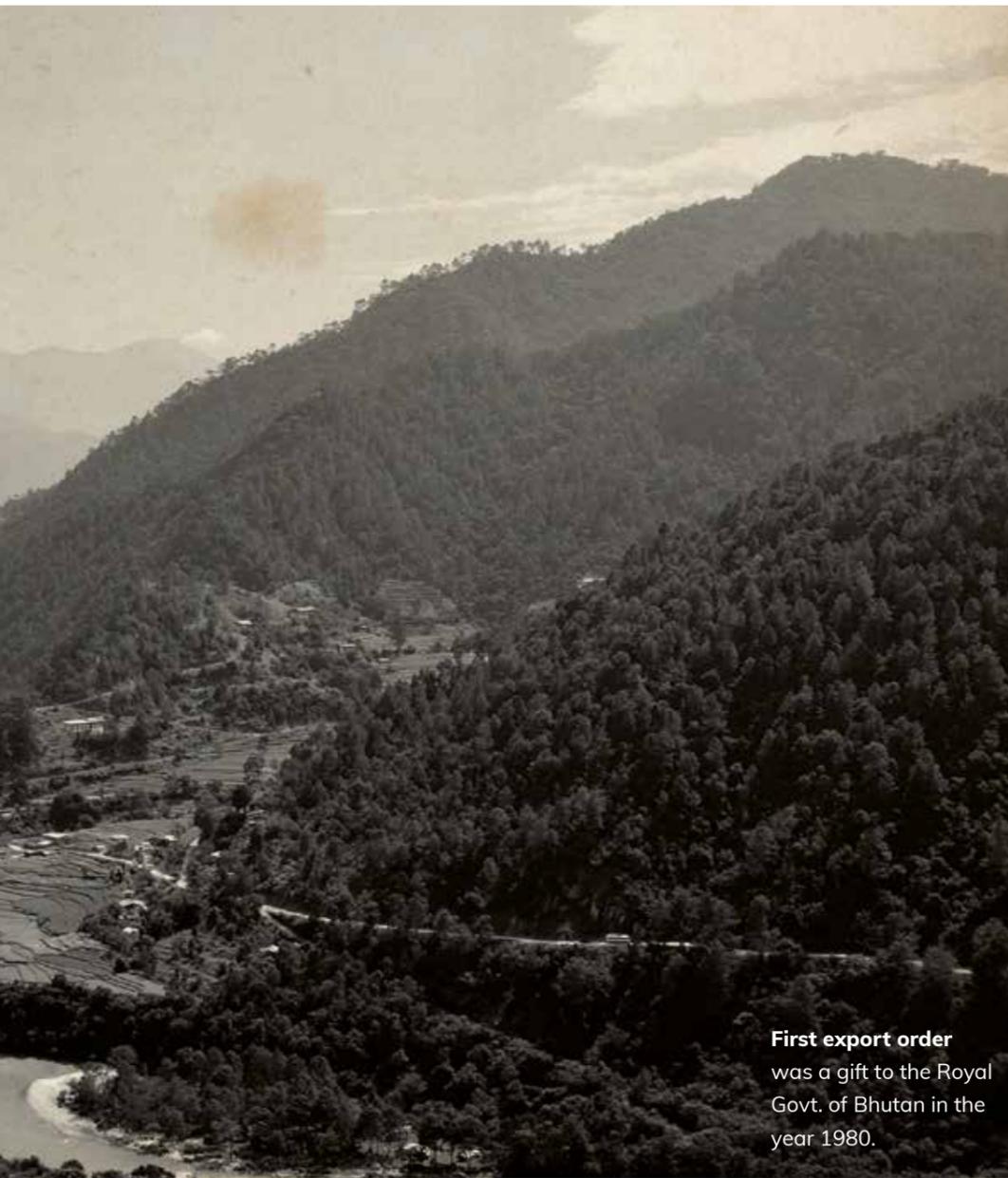
FLOVEL was promoted by **Late Dr. Raj Nath Kar**

a world-renowned technocrat in the field of Hydropower. Dr. Kar has had an illustrious career having done his post-graduation and doctorate from Imperial College of Science, United Kingdom and Munich, Technical University, Germany respectively and worked with world's major Hydro companies such as Boeing, English Electric, Escher Wyss, Dominion Engineering. He was working with BHEL, a government of India, undertaking and the only company manufacturing equipment for Hydropower projects in independent India as "Head of Water Turbine Engineering" and was instrumental in development of large Hydropower plants which were built during the decade 1960. However, he foresaw the shift of the government policy towards building thermal plants and therefore wanted to pursue his field privately outside.



Late Dr. R.N. Kar
(1928 – 1999)

FLOVEL was incorporated in April 1971 with initial seed capital of INR 10,000 under the qualified entrepreneur scheme of State Bank of India.



First export order was a gift to the Royal Govt. of Bhutan in the year 1980.

Since there was a very small market for the small Hydro in the decade of 70's, FLOVEL was majorly into the business of manufacturing of industrial butterfly Valves which were marketed by Larsen & Toubro and was a well-recognized brand all over the Country.

First order for Hydropower project, Rukti HEP with four units of 375 kW, each from Himachal Pradesh State Electricity Board (HPSEB), was bagged by FLOVEL in 1976. This was followed by a 15 kW project in Leh in 1977 and three units of 250 kW Khonsa HEP in Arunachal Pradesh. First export order for project Nagu HEP with two units of 25 kW was a gift from the government of India to the Royal Govt. of Bhutan in the year 1980.

All these projects had Horizontal Francis Turbines especially designed by FLOVEL for such applications. FLOVEL had started to get established by end of 1980 and was ready to take a giant leap in the next decade.



During this period, **Francis Turbines** were mainly preferred.



In December 1972 the last manned flight to the moon started with Apollo 17 and the gigantic Saturn V rocket. On 14 December at 05:40 a.m. Universal Time (UTC) **Eugene Cernan left** as the last person from the **lunar surface**.

Photo: NASA

At the beginning of 1973 a **ceasefire agreement was signed** between the USA and North Vietnam. The American military forces withdrew from North Vietnam.

1973 was also marked by the **first major oil crisis**. As a result of the Yom Kippur War the price of oil was raised by 70 percent by OPEC – the consequences had worldwide impact.



In Kinshasa, Zaire (DR Congo) on 30 October, 1974, the legendary fight "**Rumble in the Jungle**" between George Foreman and Muhammad Ali for the world title in heavy-weight took place. Muhammed Ali won by knockout.

Photo: El Gráfico



Photo: Apple Inc.

On 1 April, 1976, Steve Wozniak, Steve Jobs and Ron Wayne founded **Apple** in California. With innovative strength and enthusiasm they developed, among other things, a graphical user interface. They also launched the world famous "mouse".

From 1977 the **Star Wars trilogy**, directed by George Lucas, made cinema history.

The king of Rock 'n Roll, **Elvis Presley, died** on 26 June, 1977.



In 1979 Sony surprised with a portable cassette recorder in mini format. The so-called "**Walkman**" Sony TPS-L2 then became an important status symbol.

Photo: Binarysequence (CC BY-SA 4.0)



The **ninth Asian Games** were held in New Delhi in November and December 1982.

Major expansion was done in telecommunication industry, India's space programme, software industry and information technology. Influx of foreign direct investment (FDI) increased India's national reserves during this period.

In 1983, in a historic moment, **India won its first cricket world-cup**, playing at London, UK beating West Indies in the final.

Rakesh Sharma became **the first Indian to enter space**, when he flew aboard the Soviet-rocket Soyuz T-11 launched from Baikonur Cosmodrome in the Kazakh Soviet Socialist Republic on 3 April, 1984.



ICC Cricket World cup was hosted by India in 1987.

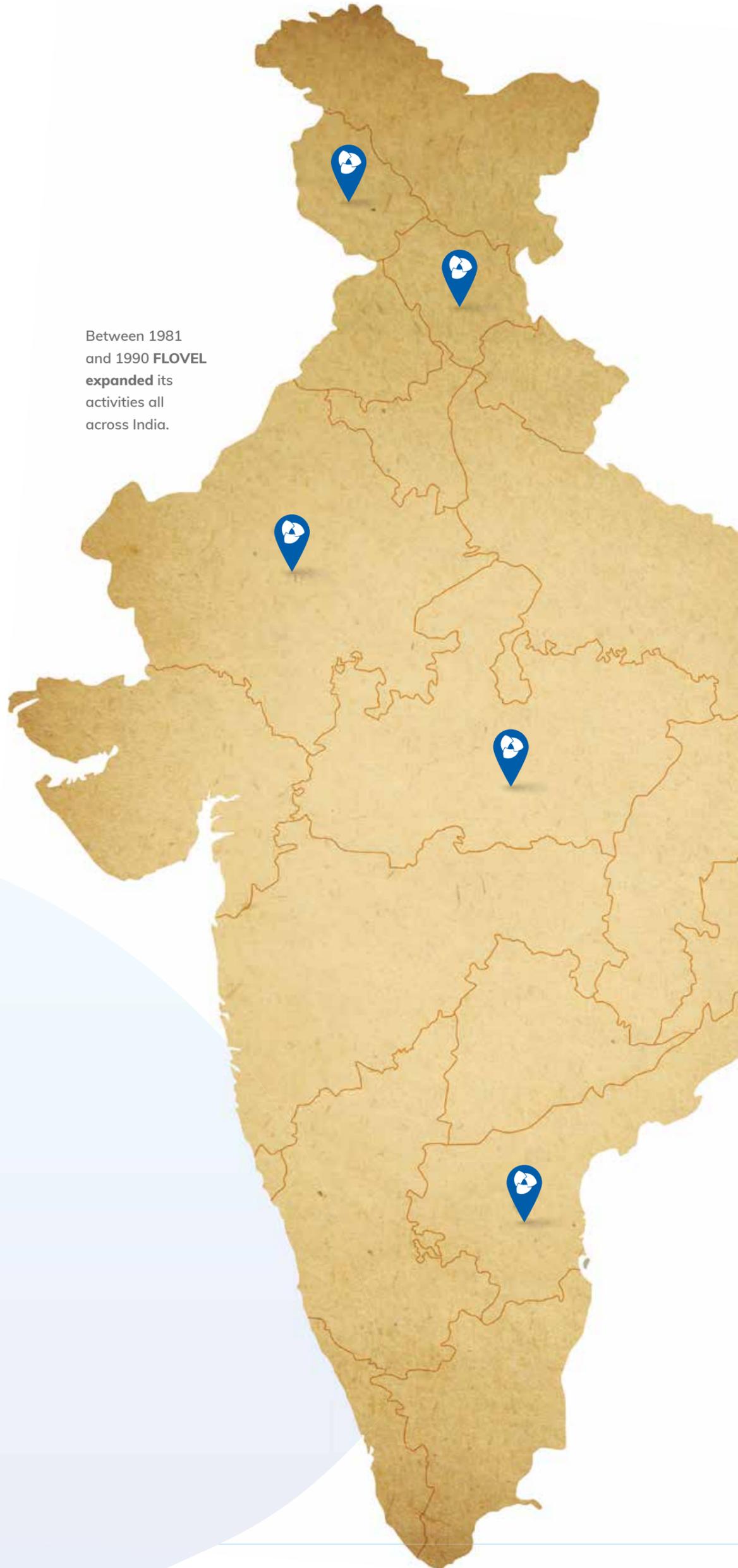
Arunachal Pradesh and **Mizoram** became 24th & 25th states of India.

Legendary Bollywood actor, **Raj Kapoor**, **died** in 1988 leaving a big void in Indian film industry.



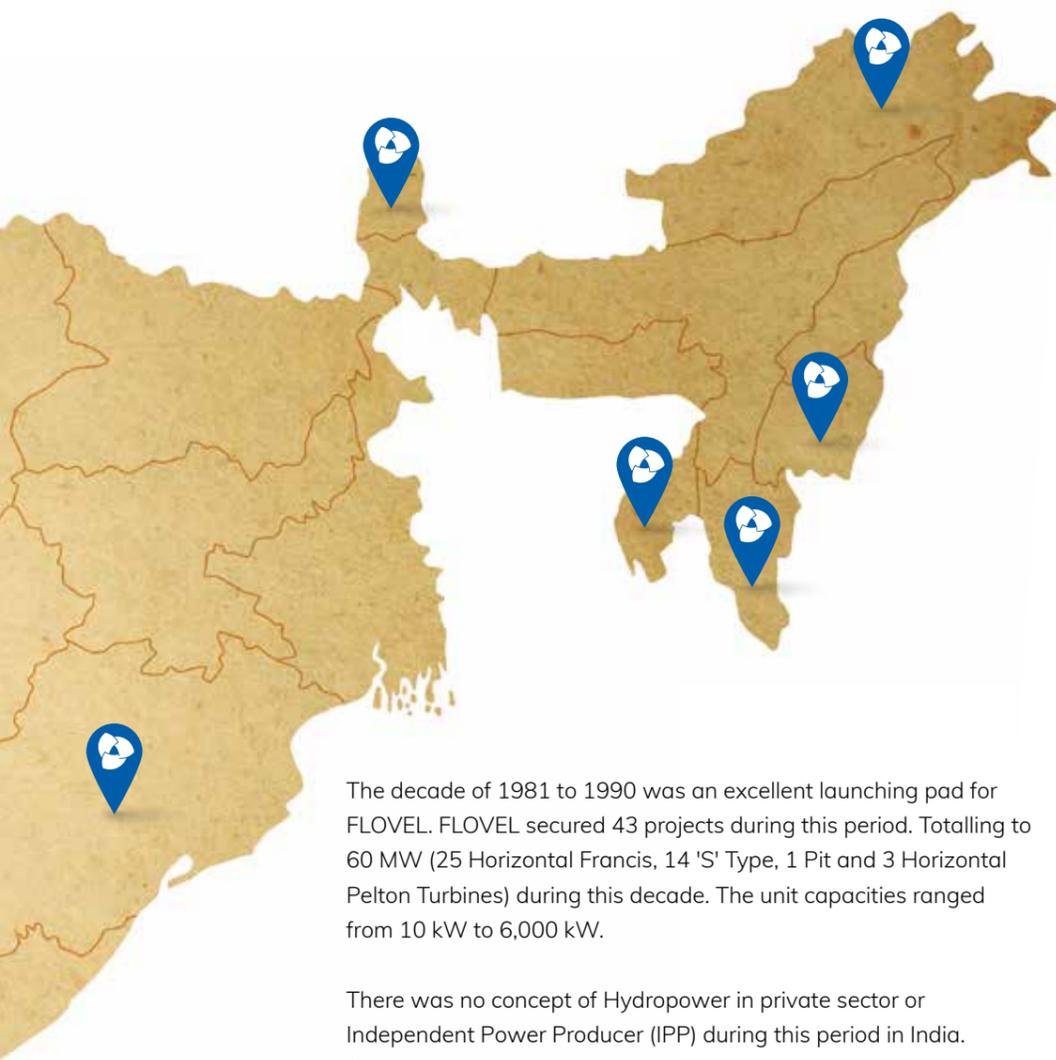
India's first intermediate-range ballistic missile, **Agni was successfully launched** from Chandipur, Odisha in 1989.

Between 1981 and 1990 **FLOVEL expanded** its activities all across India.



1981 – 1990

FLOVEL entered in technical collaboration with M/s. Tampella of Finland from 1981 especially for low head Axial and Francis Turbines and successfully launched this technology in the country.



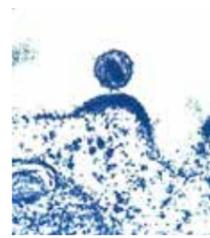
The decade of 1981 to 1990 was an excellent launching pad for FLOVEL. FLOVEL secured 43 projects during this period. Totalling to 60 MW (25 Horizontal Francis, 14 'S' Type, 1 Pit and 3 Horizontal Pelton Turbines) during this decade. The unit capacities ranged from 10 kW to 6,000 kW.

There was no concept of Hydropower in private sector or Independent Power Producer (IPP) during this period in India. Only state utilities were allowed to own and operate Hydropower projects. FLOVEL expanded its operation all over India during this period. It secured contracts from Northeastern states of Sikkim, Manipur, Tripura, Arunachal and Mizoram to Northern states of Himachal and Jammu Kashmir mainly with Horizontal Francis and Horizontal Pelton Turbines. It also covered central plain states of Rajasthan, Orissa, Andhra and Madhya Pradesh with low head 'S' Type and Pit Turbines.

FLOVEL had established itself as a reliable and quality product manufacturer by the end of 1990 and was ready to enter larger market segments. Various state electricity boards and power departments, which were the only entities developing small hydro project became regular customers of FLOVEL.



US President **Ronald Reagan** and Pope **John Paul II** survived attacks on them in 1981 with serious injuries.



On 1 December, 1981 **AIDS was recognized** as a disease in its own right by the US Centers for Disease Control and Prevention (CDC). The world faced a new plague in the 1980s. 35 million people had died of AIDS since the epidemic began.

Instead of a person, in 1982 the US magazine "Time" chose a "**machine of the year**" for the first time: the Personal Computer (IBM PC 5150).

Photo: Boffy b, CC-BY-SA



1983 is a problematic year for the world market. The international **debt accumulation increased immeasurably**. Many countries could no longer repay their loans.



1985 "**Live Aid**" concerts for the benefit of the hungry people in Africa took place in England and the USA. Over two billion people in 160 countries followed the concerts on television.

Photo: Squelle, CC-BY-SA

The 100th birthday of the automobile: On 29 January, 1886 Carl Benz received the first patent on a gasoline-powered vehicle. 100 years later, the anniversary of the Automobile was celebrated.



The **Chernobyl nuclear disaster** occurred on 26 April, 1986 at 1:23 a.m. in reactor block 4 of the Chernobyl nuclear power plant, near the city of Pripyat in the North of the Ukrainian SSR in the Soviet Union.

Photo: Arne Mueseler / arne-mueseler.com / CC-BY-SA-3.0

50 meets 50

Mr. Sushil is now fifty years young, his employing company too. This is an interview about a very good partnership.

You were born in the same year as FLOVEL. In 1971. Where did you spend your childhood and can you tell us a little bit about your school- and professional education?

Sushil: I spent my childhood in Delhi, capital of India. I did my schooling (1st to 10th classes) in Central Government School, Mangolpuri, Delhi. Thereafter completed Senior Secondary education with Government Higher Secondary School, Adarsha Nagar, Delhi. Thereafter, completed Diploma in Mechanical Engineering in the year 1993 at PUSA Polytechnic, East Patel Nagar, Delhi. Also, partly completed the Chartered Engineer course AMIE Section A, 1995 from Institution of Engineers (India), Kolkata.

How and when did you come to FLOVEL?

Sushil: I joined FLOVEL in August 2009. FLOVEL offered me the position of Field Engineer. From 2005 to 2009, I was working with Pentaflow Hydro Pvt. Limited, involved in varied activities, like vendor development, manufacturing, quality checks, site installation and commissioning and attending service calls. From 1996 to 2004, I was employed as service engineer with Neptune equipment Pvt Ltd., Patel Nagar, manufacturers of compressors, wheel alignment/vehicle servicing equipment. During 1993 to 1996, I was employed as a service engineer with Beeco Engineering, Delhi, looking after machine tools installation and commissioning.

Do you remember a special highlight, when you started at FLOVEL?

Sushil: I found the culture in FLOVEL similar to an MNC. When I joined in the year 2009, FLOVEL was on the growth trajectory. During that time, FLOVEL bagged one of the bigger capacity projects 2 x 7.5 MW RAD. What I recall is that not many engineers were keen to take up the task of erection of machines since this project was located in Kistwar and Doda region of J&K province which was infamous due to terrorist activities during those days. However, I took the challenge, visited the site and completed the erection and installation activities from start till end. I was one of the key members of the 4-member site installation team, the others being Mr. Rajesh and Mr. Suresh, who are working with us today. Mr. Rajesh got elevated in the role of project manager and Mr. Suresh became an erection and commissioning expert. One more colleague, Mr. Srinivas had left subsequently. With a multi-industry experience, I have been the senior-most member in our team. I was instrumental in developing the Documentation and simple methods of erection. FLOVEL introduced in 2014 a highly simple and robust runner hub expansion system with taper sleeve arrangement, which is unique in the industry. I was involved in the development by sharing my vital inputs based on the site experiences.

Please describe your role and what did you take care of every day in short sentences?

Sushil: I am responsible for all the site activities including erection of Turbines, Electrical & Mechanical Balance of Equipment, Dry Commissioning and Wet Commissioning of Hydro Turbines and generators sets. My roles and responsibilities also involve site related planning of materials, manpower and tools and plant requirement, co-ordination with customer for interface activities, with vendors for the required support, internally with engineering, materials management, project management, factory team in order to ensure timely and smooth progress of site activities without any glitches.

50 years of company-history is a long time. FLOVEL has mastered many challenges with a lot of commitment and perseverance. What was the biggest challenge to your job?

Sushil: Erection and commissioning of Ambarlik, Akinci-I/II, Saray & Eglence-I projects in Turkey were some of the biggest challenges that I have faced. In some of these projects, materials were lying in the storage for a fairly long time, so installing them had some issues which took me a lot of hard work to bring them to desired quality levels. Further, I also identified local manufacturing facilities, servicing agencies and managed to do replacement of age hardened materials locally. Eglence-I Vertical Francis was my first project in FLOVEL commissioned successfully with some modifications at site. Further, I was involved in the following milestone projects:

- First 'S' type Horizontal Turbine erection and commissioning which was carried out without any failure for a government utility Kerala State Electricity Board – second project in Kerala, India.
- First Vertical Kaplan project of FLOVEL (Saray HPP) project in Turkey.
- First Vertical Francis project of FLOVEL (Khao Mang) erection and commissioning completed timely and without any glitches.

Recent COVID-19 pandemic became a big challenge requiring a defined mandatory quarantine period on each deputation. This was broadly like an inactive period with only planning, documentation and to some extent providing remote support for achieving whatever small progress at site. Another challenge I faced was the flywheel replacement and runner seizure at Aniyur project in the mid of peak season, with the other machine operating at full load. In this case, we managed to do manufacturing activities locally at Mangalore workshop itself without wasting time in sending the items to the FLOVEL factory for small rectification.

Every working day should also have its happy moments. Which joyful experience do you particularly remember?

Sushil: Troubleshooting and achieving commissioning in time in all projects bring you a satisfaction. In Erevan during 2016, we supplied segment of spiral with flange joint of spiral case which was a new experience of FLOVEL, but we had to implement certain modifications at site. Pressure testing of spiral case were carried out without much loss of time. Hollow O-ring replacement was successfully carried out with solid pressure testing (15 bar). I enjoyed that success like never before.



Aniyur machine was restored in the record minimum time during peak season and amidst COVID-19 challenges. When the customer said "We never thought this work could complete in such a small time and FLOVEL did it", that summed up the brand FLOVEL and its strengths. I really enjoyed above instances as a great part of the success.

Which aspect of working at FLOVEL means the most to you?

Sushil: With knowledge sharing and team work, receiving the support, guidance and continuous engagement of the FLOVEL management, I am able to achieve any goal, howsoever difficult it may be. The people care, driven by FLOVEL top management, is extraordinary. As they say – when the commander is good, the team is better. I enjoy high morale and motivation which really keeps me inspired and energetic day after day in my journey with FLOVEL.

What do you particularly love about your job at FLOVEL?

Sushil: Resolving site issues with all dedication and in the least possible time is what drives me and I am passionate about the same. Freedom to plan and do my work and achieve more success is something which brings joy to me.

FLOVEL has the slogan "Advantage on your side".

Does this slogan also apply to you?

Sushil: It's a great identity. We are very prompt in project execution and the most preferred brand in Vietnam Hydro industry. We wish to replicate the same in other regions globally very soon.

What do you like to do after a hard day of work?

Sushil: Motivating the team to have good recreation and take good rest to ensure safe working the next day. Next day planning and reviewing the final target schedule. Discussions with customer for manpower, tools and plant and materials con-ordination.

What do you wish for FLOVEL for the future?

Sushil: To enter the large Hydro market very soon. With proven expertise, which FLOVEL has today, I wish to see more and more growth in the coming years, in all types of Hydro turbines and in various territories.

Last but not least: your job in three sentences ...?

Sushil: Bringing FLOVEL turbines to life globally. Adding value to FLOVEL every moment. Customer satisfaction like never before.

Interview by
DIETER FASCHINGBAUER
Faschingbauer & Schaar GmbH, Austria



Sushmita Sen made history when she became the first Indian woman to win **Miss Universe** crown on 21 May, 1994 in Philippines.

Photo: Bollywood Hungama / CC-BY-SA-3.0



Aishwarya Rai was crowned as **Miss World** on 19 November, 1994 in Sun City, South Africa.

Internet services were launched in India on 15 August, 1995 by Videsh Sanchar Nigam Limited. The Chief Minister of West Bengal made the **first mobile phone call in India** to the Union Telecom Minister.

Michael Jackson Concert was organized in Mumbai in 1996 drawing huge crowds.

In 1997 **Mother Teresa** died in Calcutta from heart failure.

Photo: Manfred Ferrari / CC BY-SA 4.0



Amartya Sen received Nobel Prize in economics in 1998.

India conducted a total of **five underground nuclear tests** on 11 and 13 May, 1998 as part of Pokhran-II tests and declared itself a nuclear state.

Indian software giant **Infosys** got listed at **Nasdaq**, first Indian company to do so.

India's population exceeded **1 billion** in 2000.

President of the United States **Bill Clinton** made a ground breaking visit to India in the same year to improve ties between the two nations.



Three new states – Chattisgarh, Jharkhand and Uttarakhand were formed in November 2000 to make **total states as 28**.

During this decade, a rising generation of well-educated and skilled professionals in scientific sectors of the industry began propelling the Indian economy, as the information technology industry took hold across India with the proliferation of computers.

Foreign investment and outsourcing of jobs to India's labour markets further enhanced India's economic growth. A large middle class had arisen across India, which increased the demand, and thus the production of a wide array of consumer goods. **India enjoyed a period of economic expansion** that propelled it to the forefront of the world economy, and correspondingly increased its influence in political and diplomatic terms.



1991 – 2000

The decade of 1991 to 2000 was extremely eventful and successful. It changed the profile of FLOVEL and FLOVEL graduated from Mini and Micro Hydro Projects to Small and Medium capacity projects. FLOVEL also entered into Renovation, Upgradation and Modernization of old Hydropower Projects in a big way.

The Hydropower sector was opened to private sector in early 90's and private developers had started to invest in this sector. First Hydropower project in private sector was being developed by Carborundum Universal Ltd., a very large industrial group, located in South of India, which was a low head 12.0 MW Maniyar Hydro electric project in state of Kerala. Maniyar HPP was awarded to FLOVEL in 1991 with three units of 'S' Type Turbine of 4.0 MW each. This was a milestone moment for FLOVEL and would eventually become a turning point for FLOVEL for the time to come. This was followed by many successes in states of Jammu and Kashmir (Sewa and Chenani) and Arunachal Pradesh (Sipit, Sidip and Liromoba). The next big break-through was achieved in 1994 when FLOVEL bagged 2 prestigious projects in the state of Tamilnadu and signed Sathanur with 1 unit of 7.5 MW Vertical Full Kaplan Turbine and Lower Bhawani with 2 units of 4.0 MW Horizontal 'S' Type Turbine. Sathanur was the first Vertical Full Kaplan Turbine awarded to FLOVEL. This was followed by 5 projects with 'S' Type turbine for Boruka Power Corporation in the state of Karnataka.

FLOVEL had grown substantially by 1994 and is now looking for tie up with new and latest world technologies to expand further. Working in this direction, FLOVEL formed a joint venture company with Sulzer Hydro, Germany in 1995 which was named as Sulzer FLOVEL Hydro Limited. Dr. R. N. Kar was the Chairman of the JV Company and Mr. Maharaj Kar the Managing Director responsible for the entire operations. New JV Company made a flying start by bagging an extremely prestigious project KCP with 11 machines of Bevel Gear Bulb Turbine (BGBT) for Ramakrishna Cements in Andhra Pradesh even before JV was registered. BGBT turbines are complicated machines and never been built and supplied outside of Europe before this project. All these machines were built in India and commissioned in record time. This great success was followed in 1996-97 by securing 10 machines (3 projects) of 4.0 MW each, 'S' Type turbine and 3 units of 7.0 MW Horizontal Francis in South India and FLOVEL became king of 'S' Type Turbines. First EPC



Mr. Maharaj Kar was the Managing Director of the Joint Venture with Sulzer Hydro. He was responsible for the entire operations.



For the project in Sathanur, the **first vertical Kaplan Turbine** in the history of FLOVEL was manufactured.

FLOVEL entered into Renovation and Modernization projects with a big bang by securing Mahatma Gandhi Jog Falls.



contract including civil, Hydro-mechanical and electro-mechanical works Harangi HEP with 2 units of 4.0 MW was secured and executed to perfection in 1996 to 1998. Sulzer FLOVEL also established state of the art new manufacturing unit with much bigger manufacturing area and capacities during the same period.

FLOVEL entered into Renovation and Modernization projects with a big bang by securing Mahatma Gandhi Jog Falls with 4 units of 13.2 MW and 4 units of 21.2 MW and Shivasamudram HEP with 4 units of 6.0 MW and 6 units of 3.0 MW from Karnataka Power Transmission Corporation Ltd. in 1998 and 1999. This was followed by 15.0 MW Bhandardhara in Maharashtra and Munirabad in Karnataka. All these R&M projects were secured in very tough competition with BHEL, a Govt. of India undertaking which had been the only company carrying out R&M works till that time. Year 2000 once again proved to be lucky and extremely successful as FLOVEL for the first time entered 2 export markets. FLOVEL secured its first contract with 2 units of Pelton Turbine with output of 11.0 MW Chilime HEP in Nepal and 3 units of 2.7 MW Ry Ninh 2 HEP with Francis units in Vietnam. These two markets after few years became the biggest markets for FLOVEL and still continues.



In 1991, George Bush and Mikhail Gorbachev signed the **START 1 (Strategic Arms Reduction Treaty)** treaty, which for the first time was about the dismantling and not the limitation of nuclear weapons.

The **European Union (EU)** became economic reality by entering into force of the Maastricht Treaty on 1 November, 1993. To this day this federation has more than half a billion people from 27 countries.



1994: The civil rights activist **Nelson Mandela**, who was released from prison, lead South Africa to the first free parliamentary elections together with **Willem de Klerk**.

Photo: World Economic Forum / CC BY-SA 2.0

Toy Story, the first entirely on the computer created film for cinema, was celebrated on 19 November, 1995.



1996 the **Cloning of a mammal** succeeded for the first time on Scottish Roslin Institute. The sheep, that was created by the British Embryologist Ian Wilmut, made headlines with the name **Dolly**.

Diana, the Princess of Wales, **had a car accident** in Paris on 31 August, 1997. The wife of the british heir to the throne, Prince Charles, was buried on 6 September.

12 October, 1999: The number of people living in the world **hit the 6 billion** mark.

2001 – 2010

Decade of 2001 to 2010 proved to be very eventful and full of surprises and had life changing effect on the growth and future of FLOVEL.



Calcutta **officially** became **Kolkata** in 2001.

Salman Rushdie's *Midnight's Children* was staged at the prestigious Apollo Theatre in Harlem in 2003.

The **Golden Quadrilateral** project aimed to link India's corners with a network of modern highways was initiated in 2003.

In February 2006, the government launched India's largest-ever rural jobs scheme, **aimed at lifting around 60 million families out of poverty.**

The United States and India signed a major **nuclear co-operation** agreement during a visit by United States President George W. Bush in March 2006.

In 2007, India got its **first female President** as **Pratibha Patil** was sworn in and **India** won **T20 cricket world cup.**



Photo: Vrajendranandana Das / CC-BY-SA-3.0

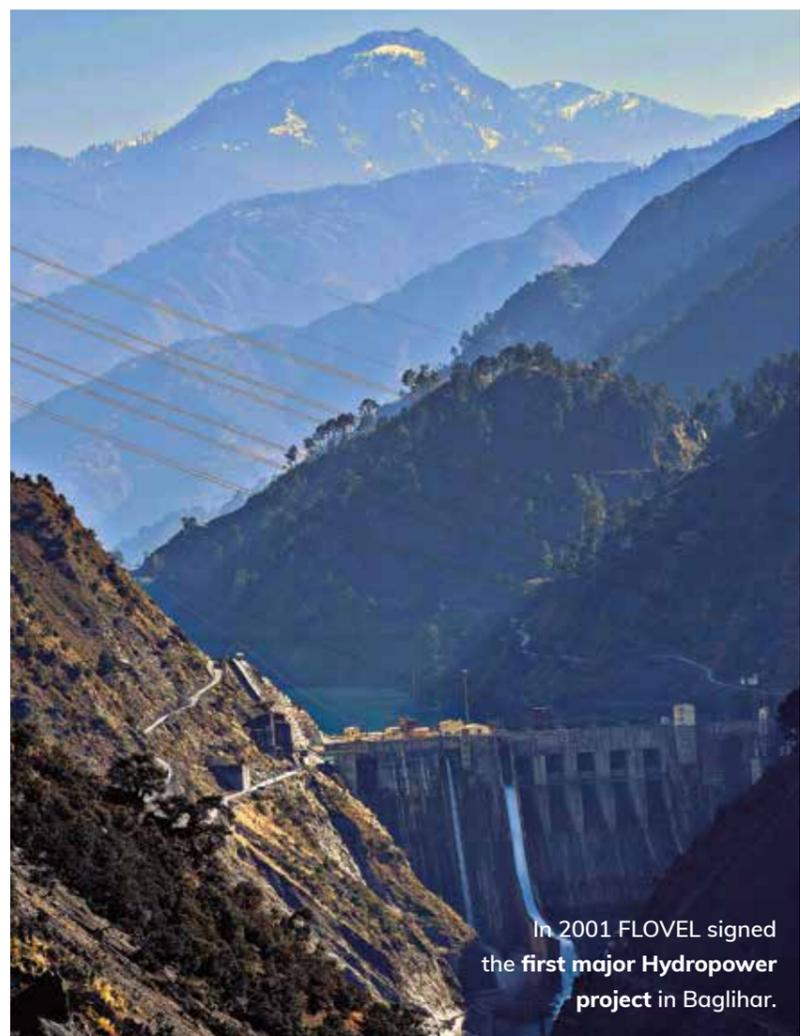
In October 2008, India successfully launched its first mission to the Moon, the unmanned **lunar probe called Chandrayaan-1**. In the previous year, India had launched its first commercial space rocket, carrying an Italian satellite.

In July 2009, the Delhi High Court **decriminalised** consensual **homosexual sex**, re-interpreting the British Raj-era law.

In the same year, **Slumdog Millionaire**, a British film with Indian cast, story and shoot location, won 9 Oscar awards, including for original song and original score by Indian musician A. R. Rahman.



The **2010 Commonwealth Games** was one of the largest international multi-sport events to be staged in Delhi.



In 2001 FLOVEL signed the first major **Hydropower** project in Baglihar.

Sulzer was acquired by VA TECH in the year 2001 and subsequently the name changed to VA TECH Escher Wyss FLOVEL Limited. This acquisition brought more resources and technologies to the company and acceptance of FLOVEL as the most acceptable supplier of E&M equipment grew many folds. FLOVEL kept on rising from strength to strength, crossing one milestone after another in succeeding years. FLOVEL bagged and executed very prestigious projects from 2001 to 2005. In addition to numerous small Hydro projects, FLOVEL in 2001 signed first large Hydro project Baglihar with 3 units of 150.0 MW each, followed by 2 units of 150.0 MW Varahi, 1 unit of 25.0 MW Neriamanglam and 4 units of 33.0 MW Teesta Low dam in 2004. FLOVEL also executed various R&M projects such as 4 units of 12.0 MW Mettur Dam, 4 units of 8.0 MW Papanasam, 6 units of 60.0 MW Sabrigiri and 6 units of 135.0 MW Nagjhari Hydro projects. Many prestigious small Hydro projects such as Somasila, Khauli, Rani Avanti Bai Somanmaradi, Varahi Tail Race, Brindawan, Chayadevi, Samal, Kadamane and Bhilangana were executed during this period. FLOVEL also strengthened its position in export market by securing Na Loi, Thac Trang, Ea Krong Rau in Vietnam and Assupiniella and Sitagala in Sri Lanka.

In the year 2005 to 2006 as a result of sale of VA TECH to SIEMENS and subsequently to ANDRITZ, the Indian Shareholders led by Mr. Maharaj Kar divested their entire equity stake at the end of August, 2006. During this period of the JV Company under the leadership of Mr. Maharaj Kar, FLOVEL were the Market leaders in small Hydro sector with more than 35% market share and had executed 259 projects aggregating to 679 MW comprising of 106 Kaplan, 127 Francis and 126 Pelton units. Were lead players in the Renovation, Modernization and Upgradation of existing power station and had executed 21 projects aggregating to 641 MW.

FLOVEL had  **35% market share** in 2005 and 2006

After divesting the entire equity stake by Kar family, FLOVEL business again started in November, 2006 under the leadership of Mr. Maharaj Kar, Chairman and Managing Director as FLOVEL Energy Private Limited. Most of the senior members of FLOVEL team continued to work as a team with Mr. Kar in the newly formed FLOVEL.



FLOVEL started its business in new avatar in running condition by securing two projects, 6.0 MW Badyar and 8.0 MW Gangani in the state of Utrakhand, India with Horizontal Francis Turbines and an extremely important Nam Chien 2 HEP with two units of 16.0 MW with Vertical Francis Turbine generator set in Vietnam from Song Da Group one of the largest joint stock companies operating in Infrastructure projects in Vietnam. These initial successes set the tone for times to come. These projects were followed by 3 more projects in Vietnam, 3 in India and 1 project in Uganda (Africa). At the same time FLOVEL had acquired a big plot of land for construction of manufacturing unit in 2007 which was constructed, and all



A new production facility was put into operation in 2008.

machine tools installed in one year period and new state of the art manufacturing facility became fully operational in 2008. The new look of FLOVEL was fully ready and equipped to take the world and competition head on.

Next two years were years of consolidation and getting ready for bigger challenges. FLOVEL entered into technical collaboration with KARSBOL CONSULTING AB, Sweden in 2008 for all types of turbines and signed a new Joint Venture with TB HYDRO, Poland for all type of valves. FLOVEL also secured 10 projects with various type of turbines in India and 2 Projects in Vietnam. These two projects in Vietnam were signed in very tough competition with other Indian companies and the customer Xuan Thien Ninh Binh Company Limited, which eventually became one of the biggest customers for FLOVEL in subsequent years. FLOVEL also secured its first project Ambralik HEP in Turkey.

Transport to Ambralik, the first project in Turkey.



Around 3,000 people were killed in the **terrorist attacks** on the World Trade Center and the Pentagon in the USA on 11 September, 2001.

The online social media and social networking service **Facebook** was founded by Mark Zuckerberg in 2004.



On 26 December, 2004 an earthquake in the Indian Ocean triggered numerous tsunamis on the coasts of the Indian Ocean. Many people were there just to bathe. In

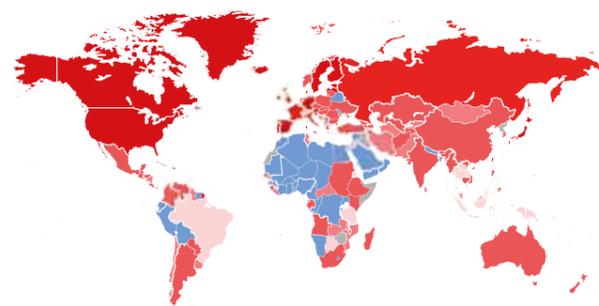
total, around 230,000 people died from the **tsunamis** and the consequences.

Apple launched the first **iPhone** in 2007.



In the 2008 presidential election, **Barack Hussein Obama** won his party's candidacy and then beat Republican John McCain. When he moved into the White House in January 2009, he was the first to hold the office of President as an African American.

A **global financial crisis** sets in 9 August, 2007 is set as the beginning of the financial crisis, because on this day the interest rates for interbank financial loans skyrocketed. The crisis culminated in the collapse of the major US bank Lehman Brothers on 15 September, 2008.



■ Countries with strong recession
 ■ Countries with an economic downturn of more than 0.5 %
 ■ Countries with positive economic development

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50 + 50 = 100

In this magazine we look back at fifty years of company history. Let's also talk about fifty years of a loyal employee who turned fifty this year: Mr. Manwar Singh Payal. Only together we are strong.



You were born in the same year as FLOVEL. In 1971.

Where did you spend your childhood?

Manwar: I was born on 2 February, 1971, in Uttarakhand a Northern state of India. My father was an Indian Army officer, I completed my Higher Secondary and Senior Secondary Schooling from Government Inter College Diuli, Uttarakhand in 1987 and 1989 respectively. I have three brothers and a sister.

Can you please tell us a little bit about your professional journey?

Manwar: I started my professional career with M/s Atlas Engineering & Inspection Service P.Ltd New Delhi (a well-reputed government-approved NDT Lab specialized in Radiography). From 1991 to 2002 I obtained the qualifications RT Level 1 from BARC, UT MT Level I, ISNT, RT Level II BARC and UT MT PT Level II ASNT. 2002 to 2003 I visited China as a third-party NDT inspector for inspection of bridges. I worked for various industries like sugar mills, thermal power, Hydropower, foundries, forge shops and large fabrication shops. From 2004 to 2006 I worked with well-reputed multidisciplinary government-approved laboratory "Spectro Analytical Labs P. Ltd", New Delhi, where I developed complete NDT lab with government approvals and supervised various types of additional NDT and painting inspection in-house and onsite as Manager-NDT. 2006 to 2009 I worked with well-reputed Hydro electric turbine manufacturing company VA Tech Escher Wyss FLOVEL (Now Andritz Hydro) a medium and large segment turbine/generator manufacturing multinational company situated at Prithla Haryana as senior engineer-NDT. It was great to work with European technical engineers on service and rehab projects. I spent a good amount of time innovating new techniques and training my subordinates. From 2009 till now I upgraded myself to ASNT NDT Level III MT and to ASNT NDT Level III UT. Working with FLOVEL, I am able to utilize my vast experience in inspection of raw material, in process and final inspections. Training my subordinates has been my passion. I believe spreading knowledge doesn't cost you a pie.

How and when did you come to FLOVEL?

Manwar: Mr. Viki Tikoo (manager QA Andritz Hydro) knew me about from the beginning of my career. He used to interact with me on NDT issues especially radiography. He was the person who got me in VATECH Hydro (now Andritz) and we worked on many projects together. After he joined FLOVEL Energy he called and asked me, if I also wanted to shift to his side. I agreed at once and now we are working together again for almost past ten years. It's nice to work under his guidance because he doesn't treat anyone as a subordinate.

Do you remember a special highlight, when you started at FLOVEL?

Manwar: It is really amazing to work in FLOVEL. Everyone is working with a smile and that is what works in favour of the company's progress. You make a mistake, you get chance to correct your mistakes and move on.

Please describe your role and what you take care of every day?

Manwar: My main job is to inspect castings, forgings at the supplier's end. Inspect welds at suppliers' end as well as at our factory. Generate reports and non-conformances and get the same resolved. Review NDT procedures/protocols. Training to subordinates, technicians.

50 years of company-history is a long time. FLOVEL has mastered many challenges with a lot of commitment and perseverance. What was the biggest challenge to your job?

Manwar: In 2006 we had to repair a large Pelton runner of output 300 MW. The runner was huge and damaged to a large extent. We had to follow all the European norms and deliver it to customers as quickly as possible. We as a team worked very hard, day and night, and completed this assignment in record time. In fact, I also got a cash prize of 10,000 INR from the manufacturing head.

Every working day should also have its happy moments.

Which joyful experience do you particularly remember?

Manwar: Last time our team leader Mr. Viki Tikoo took our quality team to watch a movie and then a nice lunch party. He keeps giving us such surprises off and on. When one of our senior inspection engineers Mr. Sh. Prakash was getting retired from services, Mr. Tikoo gave a surprise party at a very nice hotel in Faridabad. We were quite excited. We took a lot of pics and posted them on Facebook for remembrance.

Which aspect of working at FLOVEL means the most to you?

Manwar: Team work.

What do you particularly love about your job in FLOVEL ?

Manwar: Regular meetings, close interactions, more work. FLOVEL has the slogan "Advantage on your side".

Does this slogan also apply to you?

Manwar: 100% yes.

What do you like to do after a hard day of work?

Manwar: After a hard day's work I take a good bath, play outdoor games with my family/friends. Walk a mile after dinner. Weekends we try to meet our neighbors and watch a movie together.

What do you wish for FLOVEL for the future?

Manwar: FLOVEL should become a name for its best quality products in India and abroad. It should keep exploring innovating new ideas for turbines to be price competitive and more efficient.

Last but not least: your job in three words ...?

Manwar: PLAN – DO – ANALYZE

Interview by
DIETER FASCHINGBAUER
Faschingbauer & Schaar GmbH, Austria



Ngoi Hut 2A, Vietnam



Akinci-I/II, Turkey



In January 2011, India assumed a non permanent seat in the **United Nations Security Council** for the 2011 to 2012 term.

ICC Cricket World cup was hosted by India, Bangladesh and Sri Lanka in 2011 which India won by defeating Sri Lanka in the finals and India hosted First F11 race in Noida, India.

4G Service launched in Kolkata, India in 2012.

In November 2013, India launched its first interplanetary mission, the **Mars Orbiter Mission**, popularly known as Mangalyaan to Mars and was successful, so ISRO on 24 September, 2014, became the fourth space agency to reach Mars, after the Soviet space program, NASA, and the European Space Agency.

ISRO also became the first space agency and India the first country to reach Mars on its maiden attempt.

Photo: Nesnad / CC BY-SA 4.0



India's 29th State Telangana was formed in June 2014 and Several initiatives and campaigns to increase manufacturing and infrastructure such as make in India, Digital India and Swachh Bharat Abhiyan were launched.



India became a member of Missile Technology Control Regime. India also launched its **first space laboratory Astrosat** in its biggest project since its Mars orbiter mission in 2014.

2011 – 2020

FLOVEL's well experienced team had realized two important facts and concentrated to work on the same.

First was that Hydro is a cyclic market in every region and every country has its ups and downs in Hydro sector on the basis of govt. policies, hydrology and political situation prevailing in the country. The second was that Indian market is too small to cater to the well-established couple of manufacturers including FLOVEL. Based on these two hard facts it was decided that FLOVEL should consolidate its position in the countries where FLOVEL had already started operations and concentrate on developing new markets in new countries by adding at least one or two more countries under its operations every year.

Very big and substantial breakthrough in this direction took place in 2011 when FLOVEL signed Ngoi Hut 2 Project in Vietnam with two units of 24.0 MW + 10% COL with six jet Vertical Pelton Turbine-Generator units. This project also involved carrying out of model test, which was successfully conducted in a lab in Europe and FLOVEL's position in Vietnam Hydro market was fully established. In the same year second, big break-through was achieved in Turkey by entering into two very prestigious contracts 72 MW Eglence I and II HEP with 3 Vertical and 3 Horizontal Francis units and Akinci I and II HEP with two units of 3.6 MW each having PIT Type Turbine units.



Eglençe, Turkey



Khao Mang, Vietnam

FLOVEL entered Indonesian Hydro market in 2012 by securing Cibatarua and Segara projects with Horizontal Francis and Pelton Turbine units respectively. FLOVEL also secured its first contract Nam Sana in Lao PDR during the same year. Nam Sana project had a very long penstock and regulation was extremely difficult and hence each unit was provided with a fully synchronized pressure relief valve which was very much appreciated by the customer. At the same time FLOVEL further consolidated its position in Vietnam market by securing two big projects Khao Mang and Khao Mang Thong with two Vertical Francis units each of 12.5 and 15.0 MW capacity and in Turkey by securing Saray HEP with two units of Vertical Full Kaplan Turbine units. FLOVEL continued to make inroads in Indian, Vietnam and Indonesian Hydro markets by continuously securing orders during next two years. Many important projects were secured and executed in these four countries during this period.

In the year 2015, FLOVEL re-entered Nepal market after a gap of 15 years by securing Ghatte Khola HPP with two units of 2.5 MW, 2 jet Horizontal Pelton units. FLOVEL also secured two extremely important and big renovation projects in the same year. A big break-through was achieved by signing complete renovation of Turbine, Valve, Mechanical and electrical BOP, and Automation for Erevan-I HEP with two units of 25.0 MW each in Armenia. This was the first project in CIS countries. Second big renovation project secured was with 3 units of 18.0 MW Vertical Francis units Sholayarproject in Kerala, India. Project involved carrying out of turbine model test in European laboratory and complete replacement of Turbine, valve, generator, mechanical and electrical BOP and control automation of entire project.

ERP System was implemented by FLOVEL in 2016 by installation of SAP which made operations very smooth and transparent with excellent feedback system. An extremely important and prestigious break-through was made in 2016 when FLOVEL secured its first contract Omokawa in Japan for supply of Horizontal Francis Turbine and valve.



Obamacare: With the health-care reform, US President Barack Obama is keeping one of his election promises in 2010 – for the first time in US history, almost all citizens have guaranteed access to health insurance.

In March 2011 an earthquake shook the coast of Japan – 18,000 people died because of the tsunami that the quake triggered. A few days later, the **nuclear power plant in**



Fukushima breaks down. The accident changed the world: In Germany, the chancellor announced the nuclear phase-out.

Photo: Greg Webb / IAEA



In the Situation Room of the White House on 2 May, 2011 US President Barack Obama (second from left) and confidants stare at a

video wall. The **Nobel Peace Prize** laureate is there live when US soldiers kill Osama bin Laden, who masterminded the terrorist attacks on 11 September, 2001.



In a surprise announcement in November 2016, the government **withdrew high denomination notes from circulation** causing chaotic scenes at banks across the country.

The **biggest tax reform in the history** of India, The Goods and Services Tax (GST) was launched in June 2017.

India reaffirmed its space prowess and commercial launch capabilities as it successfully **launched its 100th satellite** along with 30 other spacecraft, including weather observation Cartosat-2 series in 2017.

In February 2019 **Balakot airstrike was conducted by India**, when Indian warplanes crossed the de facto border in the disputed region of Kashmir and dropped bombs in the vicinity of the town of Balakot in Khyber Pakhtunkhwa province in Pakistan. The state of Jammu and Kashmir was divided into two separate union territories known as Jammu Kashmir and Ladakh by Scrapping Article 370 of Indian constitution in August 2019.

India received the first of the **36 Rafale fighter jets** on 18 October, 2019.



India overtook Japan as the second largest steel producing country in the World.

India was formally elected as a non-permanent member of the **United Nations Security Council (UNSC)** for a period of two years on 18 June, 2020.

India approved the two coronavirus vaccines from Bharat Biotech – "Covaxin" and Oxford/AstraZeneca – "Covishield" for emergency use and the Indian Government began a **mass vaccination campaign** for COVID-19.



Two more countries were added in ever growing List of countries in FLOVEL fold when Khlong Tron with two units of Horizontal Francis Turbine was signed in Thailand in 2017 and Lower Labyat project with 2 jet Horizontal Pelton was signed in Philippines in 2018. During all this, FLOVEL continued to secure many contracts in Vietnam, Nepal, India and Indonesia. Vietnam had become a very big market for FLOVEL by this time with FLOVEL enjoying almost 40% Market share in small and medium range Hydro projects. Few very big projects such as 2 x 17.5 MW Hang Dong A B with Horizontal Francis unit, 2 x 27.0 MW Vertical Francis Nam Cum 4, 2 x 15.0 MW Horizontal Francis units Pa Hu, 2 x 33.0 MW Vertical Francis units Suoi Sap 2A and many more big rating projects were signed in 2017 to 2018 by FLOVEL.

It was felt by the management that to meet ever growing manpower requirements due to increase in both volumes and new countries, FLOVEL needed to move to a bigger and better office premises. An office space of 21,000 SFT was purchased in 2018 for shifting of FLOVEL corporate office in a posh office area. Work of interiors was assigned to a reputed company which was completed in a record period of four months and FLOVEL moved into their new office premises in February 2019.



In February 2019 FLOVEL moved into a **new, modern office** at Faridabad, India.



FLOVEL had started operations in 11 countries by 2018 and now it was the time for FLOVEL to expand its manufacturing facility to be able to cater to the bigger market and also to speed up the growth. Accordingly, it was decided in 2019 to expand the manufacturing facility by adding two more sheds much bigger and higher in size and with more than double crane capacity. Layout for the same has been finalized, machine tools selected and construction will start very soon and is planned to be completed in 2022.

While FLOVEL was planning for the big push both in terms of expansion of its manufacturing facility and increase its top line in the beginning of 2020, destiny had something else in store. Whole world came to stand still from beginning of March 2020 due to outbreak of COVID-19 and all plans had to be put on hold, as there were bigger and different challenges to be fought. Entire FLOVEL team took this unfortunate outbreak of pandemic as a challenge and continued to perform its obligations to the best possible extent. Luckily, FLOVEL had its engineers stationed in various countries and all rose to the occasion and worked overtime, sometimes at double of their capacity for completion of FLOVEL obligations to the fullest satisfaction of the customers. Many overseas projects were commissioned by adopting multipronged approach such as supporting available manpower by arranging local resources and remote support through video calling by experts based at head office in India. This was appreciated and rewarded by customers all over the globe.

Another very interesting challenge was thrown on FLOVEL in January 2020. FLOVEL's single largest Customer Xuan Thien in Vietnam was developing 500 MW Solar project and had to commission the project in very tight time frame to avail of better tariff rates. They wanted some very reliable partner for supply and execution of control equipment, SCADA, AC & DC Systems, 11 kV and 110 kV Switchgear/Switchyard equipment, weather monitoring systems and all of that in a short time of six months. FLOVEL had done many projects for them which included such equipments and they were very confident about FLOVEL's capability and dedication towards execution of such project in timely manner and hence entrusted this extremely important job to FLOVEL. The challenge was accepted by FLOVEL's dedicated team and inspite of COVID-19 restrictions, project was executed very professionally in the given time period. This earned FLOVEL many accolades from the customer and their consultants.

FLOVEL management was also planning something big in its 50 years of operation and reins of FLOVEL were passed onto third generation on 1 April 2021, when present Chairman and Managing Director Mr. Maharaj Kar handed over baton of FLOVEL to Mr. Gautam Kar taking over as the Managing Director of FLOVEL. A new era had just begun. Gautam has been part of FLOVEL for the last 22 years and was on the board of FLOVEL since 2006. FLOVEL is looking at the able leadership of Gautam to take FLOVEL into a new Decade.

Managing Director
Mr. Maharaj Kar
handed over baton
of FLOVEL to
Mr. Gautam Kar
taking over as the
Managing Director
of FLOVEL.



On 23 July, 2011 all of **Norway was in shock**: the neo-nazi Andreas Breivik killed 69 people on the island of Utöya. His victims are participants in a youth camp run by the Norwegian Social Democrats. Breivik is sentenced to life imprisonment.

On 8 November, 2016 **Donald Trump** became President of the USA - and not Hillary Clinton, as all polling institutes had predicted. Liberal America was in shock.

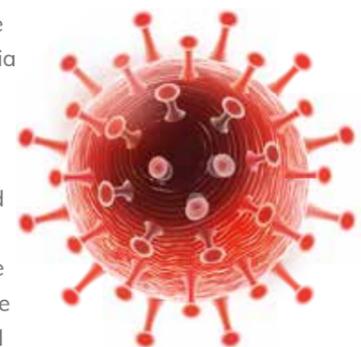


The **refugee crisis** has gripped all of Europe. Hundred thousands flee from war, misery and poverty to prosperous Europe via the Balkan route and across the mediterranean.

Photo: Irish Defence Forces / CC BY-SA 2.0

The situation with the **bushfires in Australia** is worsened. More than 400 million animals and 26 people have fallen victim to the fire.

On 31 December, 2019 the outbreak of new pneumonia with as yet unknown cause was confirmed in Wuhan, China. In January 2020 COVID-19 developed into an epidemic in China and on 11 March, 2020 the WHO officially declared the previous epidemic a **global pandemic**.



The disease is caused by an infection with the previously unknown coronavirus SARS-CoV-2. In numerous countries around the world, there are massive cuts in everyday life in the course of the pandemic. The economic crisis 2020 to 2021 is one of the effects of the COVID-19 pandemic on society as a whole. The virus claimed over 200 million infected people and over 4 million deaths by mid-2021.

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Small Hydropower has no CO₂ emissions,
which would be produced from other energy sources.
This is an important contribution to the climate protection.
Water is the oldest regenerative energy source and
ensures climate stabilisation.

We **FLOVEL** that.