

**TECHNICAL EDUCATION QUALITY
IMPROVEMENT PROGRAMME
(TEQIP)**

**Andhra Pradesh State TEQIP
Implementation Completion and Results Report**
*(As Approved by Govt. of AP Higher Education (TE II) Department,
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1.0 Introduction:

During the year 2003-04 the state of AP experienced a rapid growth in technical education and a substantial rise in number of Engineering graduates including those coming out of IIT, Hyderabad and REC, Warangal (elevated to a National level institution, NIT Warangal). The Colleges, with long standing, under the control of Universities and Government and a few Private Engineering Colleges were performing well, producing Engineering graduates of good quality. However, these were in small numbers compared to the total number of Institutions engaged in producing engineering graduates.

Government's policy was always aimed at providing (i) increased access to Technical Education of excellent quality to all groups and regions and (ii) good quality technical manpower to industry & service sectors in India & abroad. Government was always permitting the start of new courses based on user needs and in cutting edge technologies. In view of the increased local and global demand for employable engineering graduates, Government was simultaneously encouraging establishment of new colleges with UG & PG programmes in all important areas where the need is most felt. As part of Government's initiative, AICTE (All India Council for Technical Education) provided financial assistance to Technical Institutions under two schemes of Modernization and Removal of Obsolescence (MODROBS) and Research Promotion Scheme (RPS) in the Technical disciplines mentioned above through the Bureau of Research and Institutional Development (RID). The Quality Improvement Programmes (QIP) stood out as another initiative of the Government aimed at Faculty Development in the Technical Institutions. Financial support was also extended to faculty for attending Seminars and Workshops organized globally.

At this stage, being aware of the need for improving Academic Excellence at the Engineering Institutions, the Government of India has launched the Technical Education Quality Improvement Programme (TEQIP) with financial support from the World Bank. About 132 Institutions from all over the country were picked up for participating in this TEQIP project based on a thorough evaluation of the proposals submitted by several Institutions. Twelve Institutions were selected from the state of Andhra Pradesh (excluding the centrally funded NIT Warangal) to be the TEQIP Institutions. For participating in TEQIP and receiving the financial support under TEQIP, these Institutions have agreed to implement certain stipulations of TEQIP in raising the academic excellence prevailing at the Institutions.

The 12 institutions selected for participation in TEQIP are:

I. Lead Institutions

- 1) O U College of Engineering, Hyderabad
- 2) J N T U College of Engineering, Hyderabad
- 3) S V U College of Engineering, Tirupati
- 4) A U College of Engineering, Vishakapatnam

II. Networking Institutions

- 1) O U College of Technology, Hyderabad
- 2) J N T U Institute of Science & Technology, Hyderabad
- 3) J N T U College of Engineering, Ananthapur
- 4) J N T U College of Engineering, Kakinada
- 5) R G M College of Engineering, Nandyal
- 6) Sreenidhi Institute of Science & Technology, Ghatkesar
- 7) Bapatla Engineering College, Bapatla
- 8) Govt. Institute of Electronics, Secunderabad

Among the networking institutions there are four University Engineering Colleges, three Self-financing (Private) Engineering Colleges and one Government Polytechnic

While the University Engineering Colleges and the Govt. Polytechnic enjoy the TEQIP funds as total grants, the private institutions get these funds as a mixture of loan (74%) & grant (26%). The loan portion is to be repaid in a period of 25 years after a moratorium of 5 years at an interest as applicable to Externally Aided Project (EAP).

All the institutions have evinced keen interest & planned the implementation of TEQIP as outlined in their Concise Institutional Proposals (CIPs). All the CIPs were vetted at State & National level. The institutions agreed to implement set targets, report periodically and show the impact of the TEQIP on academic excellence attained. The institutions have successfully completed the implementation of TEQIP and reported their results in their self-assessment reports. This "Report on TEQIP Implementation Completion & Results" of the State is prepared on the basis of the self assessment reports provided by the 12 institutions and with the inputs provided by the TEQIP Academic Auditors and Mentors.

2.0 Project concept, Development objectives and Design

The primary Project Development objective was clearly planned to achieve producing high quality technical professionals, through reforms in the Technical / Engineering Education system in order to raise productivity & competitiveness of Indian economy.

The TEQIP project objectives, components & overall design were thoroughly scrutinized by the state and finally project agreement was signed by the Principal Secretary, Higher Education after being vetted by the Chief Secretary; Advocate General & the Finance Department.

The TEQIP project is a different kind of project aimed at elevating the quality standards of students graduating from Technical Education Institutions. This “first of its kind” project has concentrated on the following components to improve academic excellence prevailing at the Institutions:

- I) **Institutional development** through
 - a) Academic Excellence (Academic Reforms and Faculty Development),
 - b) Research, Consultancy and Industry Interaction
 - c) Networking (i.e., resource sharing)
 - d) Services to Community & Economy Development &
 - e) Tribal Development Plan and

II) **System Management Capacity Development**

Clarification on various components and information on expected outcomes were provided from time to time, while implementing TEQIP, by NPIU and World Bank Teams.

The Government of Andhra Pradesh provided full and helping support to the project institutions in their implementation of the TEQIP Reforms. The Monthly Review Meetings, interaction between State Project Facilitation Unit, TEQIP Institutions and Mentors helped the Institutions carry out successfully the academic & non academic areas. Even certain reforms like credit exemptions, transfers etc. which could not be completely implemented uniformly in all institutions have been taken up subsequently by the SPFU. Further the state has achieved all the set targets in all the project components which were well designed. Results achieved under Service to Community, Economy and Tribal Development Activities would have been more impressive if only the expectations were as clear at the beginning of the project as they are now.

The achievements under TEQIP are perceived through increased employment and increased average emoluments of graduating students of the Participating institutions. Other indicators have been set as increased resource sharing activities among project & non Project institutions, improved internal efficiency, increased involvement of faculty & students with community & ultimately improvement in the quality of Engineering Education as perceived by all the concerned stake holders.

The project has sensitized the project institutions and the Management units at state & institution levels to a large extent with reference to excellence in under graduate level of Engineering Education. Greater emphasis on PG, Research education and Industry-Institution Interaction is being provided for in Phase-II. Since the number of institutions were very less compared to the total number of institutions in the State, the TEQIP has been construed as a pilot project. Now it remains for the State to scale up the processes by expanding it to a large number of other institutions with a view to enhance quality of Technical Education. This can be achieved by

- 1) Including more no. of institutions in Phase-II and
- 2) Increasing networking activities with non project institutions.

3.0 Achievement of Project Development Objectives (PDOs)

The PDOs in the order of their hierarchy are listed as:

1. To promote competitiveness in industry and services: Focus on promoting policy and institutional reforms in the area of technical education to improve the quality of India's pool of technical manpower.
2. To support production of high quality technical professionals through reforms in the technical/engineering education system in order to raise productivity and competitiveness of the Indian economy.
3. Establishment / strengthening of program management structures.
4. Research and training in education planning and management.

The project institutions which were reasonably performing well before the project, have implemented TEQIP in real spirit which can be perceived from their achievements as against the PDOs.

PDOs	KPIs Outcome indicators	activity	Achievement (data for all 12 institutions C- Cumulative, Av- Average & An- Annual		
To support production of high quality technical programmes through reforms in the technical/engineering education system in order to raise productivity & competitiveness of Indian economy.	Improved Employment Rate	campus interviews	UG	2391	An
			PG	658	“ An
		other means	UG	219	“ An
			PG	400	“ An
		Unemployed after 1 year	UG	104	“ An
			PG	183	“ An
	Admission in to PG	559			
	Earnings of graduates	Av. annual salary	0.48 million Rs		
		Highest annual salary	1.3 million Rs		
	Increased networking activities	Students sent to other instns.	4752 C Limited mainly to prefinal and final year students		
		Faculty days loaned	686	C	
		Joint activities	14	C	
		a) Projects			
		b) Training Programmes	156	C	
		c) Consultancies	97	C	
		d) Publications	360	C	
		e) Seminars/Workshops	246	C	
		Joint M.Tech & Ph.D	520	C	
	No. of person days labs utilized by other instns.	144	C		
	Improved internal efficiency of engineering education system	teaching days in a year	180 An		
		Academic calendar in your control	Yes-9 No-3 (private)		
		No. of days of slippage in a year	Minimum - 0 And maximum-15		
		Whether admissions under your control	Partially in pvt.instns & all other through CET.		
		No. of admission days	3		
Declaration of results under your control		Yes-9 No-3(private)			
No. of days for declaring results		15			
Ratio of non teaching to teaching staff		1:1.3	Av		
Increased involvement of institutions with community	interaction person- hours a)Faculty community	8539	C		
	b)Staff community	4241	C		

		c) Student community	15337	C	
		d) Community members visiting instns.	182076	C	
		No. of progrs. For a) Community	366	C	
		b) Un organized sector	108	C	
		c) Industry personal	66	C	
		No. of technologies transferred	42	C	
		No. of beneficiaries from skill training progrs. a) Women	3027	C	
		b) SC/ST/OBC	3715	C	
		c) Un-employed	5464	C	
	Improved planning and management of engineering education system	No. of new programmes	UG	15 (1 of 2 proposed and 14 not in CIP)	
			PG	29 (12 of 12 proposed and 17 not in CIP)	
		Re oriented programmes	UG	62	
			PG	97	
		No. of students graduated in cutting edge technologies	1572		
		average time taken in revising / upgrading curricula	Minimum-2 and Maximum- 4 Yrs		
		BoG constituted	Yes- In all 12 Institns.		
		No. of BoG meeting held	83		

PDOs	KPIs Output indicators	activity	Targets (2008)	Achievements
Out put from each component Component I: Institution Development through competitive funds a) Promotion of Academic excellence in institutions.	Increased no. of high quality	UG-including cutting edge/ cutting edge	1609	1789 An
			867	783 An
		PG	1863	1475 An
		PhD	190	150 An
	Increased professional outputs	Publications	2519	3992 C
		Academic Products	350	3107 including course material and lab manual “

		R & D Products Design of commercial use (applied Research only)	86	84	C
		Patents	18 C	Obtained- Applied- In Pipeline-	5 19 6
(b) Networking of institutions for quality enhancement & Resource sharing	Through sharing resources	No. of Publications	214	373	C
		Joint funded R& D and Design projects	77	55	C
		Consultancies	277	261	C
		Training programmes	272	269	C
		Joint research guidance	213	223	C
(c) Enhancing Quality and Reach of services to services to community and Economy	Revenue generation	IRG	449.43	597.57 Million Rs	
	Service to community activities	Training for socially disadvantaged groups	Progs	269	98
			Benfs	4335	3715
		Un employed	Progs	121	92
			Benfs	3932	5464
		Un organized sector	Progs	145	108
			Benfs	5440	4827
		Community	Progs	340	176
			Benfs	9364	23130
	Industry	Progs	122	66	
Benfs		2590	2340		
Component:2 System Management & Capacity Improvement ➤ Establishm ent/Strengthening of program management structure ➤ Research & Training in education planning and management	➤ Increased availability of well trained system/institution managers	No. of well trained system/institution managers	730	439	

Project component / sub component I. Institutional development through competitive funding	Input indicators (Budget)			
		Activity	Target Rs. millions	Achievement millions Rs
(a) Promotion of Academic Excellence	INPUTS	Civil works,	98.624	98.624
		goods,	1113.707	1113.707
		consultants services	4.372	4.372
		trainings	98.607	98.607
		incremental costs	70.499	70.499
(b) Networking of institutions for quality enhancement			20.031	20.031
(c) Enhancing quality and reach of services to community and Industry			20.294	20.294
II. System Management Capacity Improvement				
	Activity	Target Rs. millions	Achievement Rs. millions	
Establishment / strengthening of program management structures				
	goods,	2.993	2.992	
	consultants services	1.950	1.935	
	trainings	3.315	3.149	
	incremental costs	18.442	16.944	

4.0 Achievement by Project components

The well designed project components have been achieved at institutions and state level with respect to self set targets in terms of outcomes & outputs. Though several achievements have surpassed the set targets, certain activities under services to community & economy development and Networking components have been achieved in terms of numbers but not satisfying to the extent of core concept.

The legal covenants viz. accreditation of all programmes, autonomies, BoGs, four funds & IRG have been achieved but the block grants pattern of funding is partially in place as the provision of matching grant as envisaged by Gol is yet to be implemented.

In spite of several constraints the management system capacity improvement has taken place predominantly in respect of full-fledged SPFU with sufficient number of regular & permanent officials working all through the project period except in the procurement cell.

The achievement under each of the components and sub components as against the self set targets are given the **Annexure I (A – L)**. The other achievements in the areas of civil works, utilization, ISO certification, Innovations etc. are detailed below:

Civil Works: 8 out of 12 institutions (barring BEC, Bapatla, RGM CET, Nandyal, JNTUCE, Anantapur, and JNTUCE, Kakinada) have opted for civil works. AUCE & OUCE have taken up civil works with dual funds i.e. TEQIP funds coupled with University funds. The major civil works under taken were to complete central facilities providing library (AUCE, Vizag) Technology Development Centre (OUCE, Hyderabad) 24X7 computer lab (JNTUCE, Hyderabad), Central Instrumentation / Nano Technology lab (IST JNTU, Hyderabad), and new laboratories in all 8 project institutions. Besides these facilities, the institutions have taken up for extension of existing laboratories (SVUCE, Tirupati) new class rooms, improvements & conveniences. All the civil works have been completed in time and put to use during the project period.

Utilization: The utilization of TEQIP resources in the project institutions is optimum during the project period with plans to sustain the utilization after the conclusion of the Project. The resources generated except for the sophisticated ones have been optimally utilized to a major extent for the improved teaching-learning processes, Research, Consultancy and sharing with the network partners. The institutions intend to sustain the culture of utilizing the resources to a major extent through linkages with industry for consultancy, sponsored / customized research and initiating 'self-financing' and 'user-oriented post-graduate programmes.

ISO Certification: The SPFU-AP with the help of OUCE, Hyderabad has conducted a workshop for the benefit of the project institutions in seeking ISO certification. Initially, the institutions did not feel the need for obtaining ISO certification. Subsequently however, prompted by NPIU and SPFU, OUCE Hyderabad, AUCE Vishakapatnam, SNIST Ghatkesar and RGM CET Nandyal have obtained ISO certification.

Other Achievements: There is a sudden rise in the number of patents applied for by the institutions towards final stages of the project. TEQIP funding has resulted in improved infrastructure at the Institutions, It also enabled Faculty participation in Conferences and Workshops in India and Abroad, and Faculty exposure to facilities and research work being carried out at some of the good universities abroad. Besides, the Faculty has participated in a number of Faculty Development Programmes. All this has changed the mindset of faculty and encouraged them to apply for and obtain patents based on their Research findings and Innovations.

The note worthy achievement is identifying the need for inclusion of services to community & economy development in the curriculum to take up live problems of the community for working on and provide technology based solutions.

The self financing institutions participating in the project have implemented several procedures that are totally new to them and are committed to follow similar procedures in their procurements, academic processes, and networking etc. during the post project period.

The institutions continue to implement the academic and non-academic reforms after the project period. The continuance of BoGs, exercising 4 autonomies, generation, retention and utilization of IRG, maintenance of four funds, retention of tuition fee, network with institutions for resource sharing, prepare Faculty & Staff Development Plan after thorough training need analysis, use of live community problems for project works by including services to community & economy development in the time table are some of the activities that would continue in all the project institutions after the conclusion of the project.

5.0 Implementation Mechanism and performance (Monitoring and evaluation mechanism and performance)

The State of AP has implemented TEQIP in the true spirit as envisaged in the project implementation plan (PIP). The full pledged SPFU was in place with 4 cells viz. Programme, Procurement, Finance & Quality Assurance Cells, with dedicated officials working during the full project period. The implementation was regularly monitored in the monthly review meetings (MRM) for the 12 project institutions by mentors, SPFU officials, Commissioner of Technical Education and Principal Secretary. During the MRMs the institutions were required to furnish the necessary information, discuss their issues and concerns and review their implementation component-wise. The Institutes also looked in to their financial status, audit issues. When necessary, exclusive sessions were held on networking, services to community & economy development, strategic planning, preparation for Phase-II with participation of officials from NPIU & Universities. A few of these MRMs were held in some institutions instead of at SPFU Hyderabad premises.

Initially there were 4 mentors associated with SPFU AP. Subsequently only 3 mentors remained with SPFU in view of the health problems of one of the Mentors (a Senior Retired Professor of IIT). The mentors have been a real asset for SPFU. They have contributed much in addition to mentoring and carrying out performance audit. They had been the guiding force of SPFU in implementing TEQIP. All the mentoring & performance audits were completed as scheduled and the reports sent to NPIU in time. By the end of the project seven performance audits followed by seven mentoring exercises were completed. In case of 2 or 3 institutions additional mentoring was done at their request. In addition the mentors have also attended BoG meetings in the respective institutions to request for the attention and support of the Governing Body to sort out any issues that were impeding the progress while implementing the TEQIP reforms.

The perceived scores by the auditors and the calculated scores based on the feedback provided by the stakeholders that reflect the achievement of the Institutes have been steadily improving each auditing to the subsequent auditing. Additionally, the correlation between the perceived and calculated scores has been generally acceptable. Capping it, all these scores have always been much higher than the national averages calculated.

The student and faculty satisfaction briefs prepared with stakeholder inputs and using the software developed for performance audit, initially shown certain discrepancies for various reasons. The reasons were analyzed at SPFU level and necessary steps were taken to bring down the discrepancy. In the subsequent audits the curves show differences that

are under control and gaps, if any, were found attributable to specific reasons.

The four areas considered during the performance audit viz.

- 1) Project Implementation
- 2) Implementation of Institutional Reforms
- 3) Administrative and Managerial Efficiency Improvement and
- 4) Quality of Education, Training and Services

were given scores out of 10 every time and it is observed that there is a substantial improvement during subsequent performance audit exercise in case of most of the AP State TEQIP Institutions . The audit scores of the seven performance audits conducted are given in **Annexure II (.xls)**.

The state adopted a robust system of financial management. The budget was released to PD A/c of State Project Advisor, who in turn was issuing cheques to institutions in advance. The state released annual budget in 4 quarterly installments which was released to institutions in 4-6 installments every year depending on their utilization and TEQIP norms. Each time the institutions were receiving funds in advance, facilitating them to achieve timely utilization of funds provided. Regular reconciliation of PD A/c. and institutions accounts was taken up every month.

The initial project outlay of Rs.1528.530 millions was later reduced to Rs.1417.834 millions due to diversion of some funds for Tsunami relief and due to fluctuation of SDR. Again the project out lay increased to Rs.1452.834 millions by providing additional funds of Rs.35 millions. The funds released to the institutions are fully utilized and a small amount of Rs.1.68 millions left over at SPFU as on the date of the closure of the project. Besides the principal amount, the institutions and SPFU have earned an interest of Rs.12.219 millions and utilized Rs.11.817 millions for TEQIP activities as on closure of the project.

The institutions and SPFU have balance of Rs.0.163 millions and Rs.0.239 millions respectively out of the interest earned, which will be utilized during post phase-I and preparation works of phase-II.

The institutions have been sending statement of expenditure (SOE) every month to SPFU, which were consolidated and sent to NPIU along with SPFU expenditure for reimbursement.

JRMs

The State has been participating in the JRMs from its inclusion stage in second cycle of phase-I i.e. from 3rd JRM. During each JRM, the State's presentation on the implementation of the project was appreciated by NPIU, Govt. of India, World Bank and all the participants. This is based on

the presentations of the State highlighting the achievements of the participating Institutions in the state and SPFU efforts to strictly adhere to stipulated norms and procedures. During the 6th & 7th JRM ranking was given among participating States and Bureau of Institutes of Technology (BIT) and AP State was ranked first for scoring maximum marks as per the criteria laid down by Govt. of India, NPIU and World Bank. This is reported in the Aide-Memoire of the respective JRM's. Later the ranking system was dispensed with. However, during each JRM the mission continued to appreciate the AP State for its better performance. The state was regularly taking up the follow-up action after every JRM as recorded in Aide-Memoire.

The State Level Committee's Observations on self assessment's reports of AP institutions in the implementation of TEQIP are given in the Annexure III.

Website: the website apspfu.com hosted by SPFU with all the information of TEQIP institutions and their activities was launched during 4th JRM held hosted by AP SPFU at Hyderabad. All the monthly formats furnishing the information on academic excellence in AC1, AC2 & AC3, procurement details in PG1, PG2 & PG3 and CW1, CW2 & CW3 and expenditure details in SOEs & proforma 'A' & quarterly FMRs. Besides these regular formats, certain general information is also furnished on the website. However, due to some technical problems the consolidated data under each component could not be published and is presently not available.

6.0 Project sustainability

The TEQIP project was in deed a blessing for the 12 project institutions due to:

- i) Policy support for the reformative processes
- ii) Provision of significant levels of autonomy in academic, administration, management & financial matters
- iii) Financial support for institutional development

The institutions have utilized the project to the best possible extent and have dedicated themselves to continue implementing the reformative processes. The institutions have been enabled to implement these processes on continuing bases even after the project concludes. They all seek their participation in Phase-II.

During Phase-I the institutions have been implementing several institutional reforms including offering state-of-the art curricula, start new PG programmes in emerging and interdisciplinary areas that are demand driven. Institutions have also provided for flexibility in entry & exit and choice of electives etc., developed the culture of networking by resource

sharing, generate IRG through consultancy and non-conventional academic programmes of interest to industry, QIPs; distance-learning programmes & liaison with industry, Further they have improved their internal efficiency after introducing these reforms and continuing with them. All the Institutions have worked out meaningful strategies to continue with the good practices initiated during TEQIP after its conclusion.

The major financial reforms like retention of tuition fee, maintenance of four funds, generate, retain & utilize IRG by the institutions do continue to exist in these project institutions which will enable them to achieve financial sustainability. In addition to these avenues, they have procured state-of-the-art facilities in their institutions. This will strengthen the industry interaction and result in consultancy, customized and sponsored research in times to come. They will also undertake projects with their available resources. The faculty is also trained in the latest technologies for undertaking technology based research work in any area. In view of the large number of engineering institutions in AP State there is lot of potential for realizing synergy benefits from pooling of expertise and facilities through NETWORKING. These activities will enable institutions to have enough IRG necessary for sustenance of activities. .

7.0 Bank Performance:

The main philosophy behind the TEQIP which is to bring in a reformative process in the technical institutions is achieved today. The World Bank participation right from the conceptualization stage of TEQIP is clearly visible in terms of accuracy, relevance and opportunistic nature of the project. The project has taken its correct shape and proved its unique nature in realizing its goals.

The World Banks role in working with NPIU to benefit the States and Institutions and their efforts during the workshops are commendable.

During the JRMs the Bank's role in:

- i. Monitoring and evaluating the implementation component-wise
- ii. suggesting the ways to improve implementation
- iii. Clearing the conceptual problems in understanding certain components and activities taken up.
- iv. Motivating the States and institutions to accelerate the activities
- v. Advising properly the slow performing states and institutions to catch up with the expectations of TEQIP.

helped the project to progress in a proper direction and magnitude.

Finally, the role played by World Bank in the timely reimbursement of expenditure claims is excellent. At any given point of time, reimbursement process was not lagging for more than 2-3 months, which time is usually is the case in paper transfers.

The post procurement Audit by the Bank with the help of NPIU officials is an eye opener for the Institutions and States as several issues came for discussions that enlightened the procurement personnel in the Project.

The TEQIP Implementation Survey, scrutiny of self-assessment reports of institutions, certain initiatives of the World Bank in conducting meetings of learning forum on e-governance are all well appreciated.

8.0 Borrower's & Implementing Agency's performance.

The State of A.P. is indebted to MHRD/GOI for its selection and participation in the TEQIP Phase-I. It was just at an appropriate time when the State was contemplating to bring quality in technical education, the TEQIP support was given to the State. The TEQIP had imbibed several quality processes in the system of Technical Education. Though these processes are implemented in a limited number of institutions during phase-I they can be expanded by scaling up processes.

The basic concept of designing the TEQIP Project in tune with the National policy on Education has enabled the states and institutions to improve the quality in Technical Education through reforms that are policy supported. The series of workshops conducted by NPIU & MHRD officials right from the stage of preparing State's proposal, CIPs, orientation programs, mentors regional meets, workshops for clarity in concepts have contributed for effective TEQIP implementation.

The software developed for eliciting the satisfaction of students and faculty in implementation of the project has been useful in understanding the impact of TEQIP on the stake holders. The efforts of NPIU in monitoring the Project implementation through SPFUs has been Herculean task as far as abiding to the schedules of reporting are concerned.

Reallocation/ re-appropriation of Project funds under different components due to reasons like diversion of small part of TEQIP funds to Tsunami relief and fluctuation in SDR's has created inconvenience to the institutions in implementing the planned activities. However, this has been compensated as far as the State of A P is concerned, by the provision of additional Rs 3.5 crores diverted from the allocations to NITs during the last leg of the

project. The institutions and SPFU finally enjoyed the privilege of fulfilling their targeted activities.

The States and NITs during 8th JRM have expressed their willingness for the extension of project closing date enabling them to have considerable time to complete their residual works of Phase-I. The State is thankful to MHRD & NPIU for extension of the Project closing date. The additional funds provided at the end also facilitated to undertake more activities.

9.0 Lessons Learnt

The Institutions have listed a number of issues under lessons learnt during the implementation of the project. Some of the lessons learnt are:

- i. **Internal revenue generation.** The resources created under TEQIP have to be optimally utilized which can be achieved when the institutions undertake simultaneously short term courses, distance education programmes, consultancy, projects, sponsored/customized research etc., along with their regular academic work and generate revenue for self sustainability. IRG enables the institutions to have funds needed for upkeep and maintenance, of equipment, staff development, depreciation & corpus fund accounts and other developmental activities.
- ii. **The Faculty and Staff Development Plan (FSDP)** has to be regularly prepared after rigorous training need analysis by the every faculty and staff member. The FSDP has to be prepared, executed and the impact of trainings must be evaluated on a systematic basis. This will enable the faculty to be retrained to suit the new and emerging needs. Their pedagogical skills have to be improved. The FSDP should match with the vision and goals of the institution.
- iii. **Flow of information** is vital for monitoring and evaluation of the any project. Hence a robust MIS has to be in place for proper documentation and report generation at different intervals of time. The system must enable to identify the status of implementation, and provide information that is accurate, secure, and reliable to the project leaders whenever needed. MIS has its importance in project monitoring and control by providing a feedback on the plans and achievements and corrective steps to be initiated for matching progress with plans.
- iv. The importance of **Service to Community and economy Development** was well perceived. Technology Institutions should

consider it as their responsibility to provide expertise to address the technology related problems of the community. These problems may be location specific and the faculty and Students of the Institutions around that area should take this as challenge and help the community with workable and cost effective solutions. Students should be motivated and involved in these activities. These projects may even carry some credits to derive best results.

- v. Improving the **internal efficiency of the Engineering Education system** by increasing number of teaching days, prepare the academic calendar including all the class test and examination dates, providing the students information on the course outline, lecture-wise coverage through LAN and creating transparency in evaluation of tests by returning evaluated scripts to the students etc. will promote better and serious academic environment in the Institutions.

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