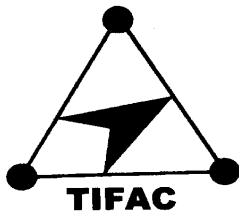


सृजन (SRIJAN)

*TIFAC-SIDBI Revolving Fund
Technology Innovation Programme*

...Catalyzing development & commercialization of innovative technologies



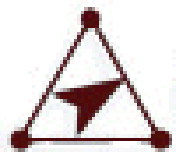
Technology Information,
Forecasting & Assessment Council
Department of Science &
Technology
New Delhi



August 12, 2011



www.tifac.org.in



TIFAC

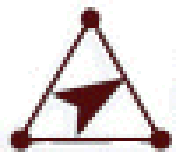
Technology Information, Forecasting & Assessment Council

Department of Science & Technology (DST), Govt. of India

Objectives

- To look ahead in technology trajectories to identify priority areas & options for India towards facilitating policy formulations
- To undertake technology assessment studies to generate technology linked business opportunity reports in the areas of national importance
- To exercise Technology Vision and Technology Forecasting studies for India in priority areas
- To facilitate and support technology developments through concerted programmes in association with academia, R&D and industry





Programmes

- ❖ **Technology Vision 2035: A national level long-term exercise**
- ❖ **Technology Forecasting / Foresight studies for India**
- ❖ **Integrated Technology Assessment Programme (iTAP)**
- ❖ **Specialized studies in technology linked business opportunities**
- ❖ **Bioprocesses & Bioproducts Programme**
- ❖ **Technology Refinement & Marketing Programme (TREMAPP)**
- ❖ **SME Technology Upgradation Programme**
- ❖ **TIFAC-SIDBI Revolving Fund for Technology Innovation Programme (SRIJAN)**
- ❖ **Mission REACH – Relevance & excellence in achieving new heights in technical education**
- ❖ **IIASA Programme**





Synergizing Strengths & Capabilities

TIFAC, primarily a technical organization, would carry out technology appraisal of project proposals in terms of assessing innovation contents, novelty and technical feasibilities

SIDBI, a financial institution, would carry out financial appraisals of proposals and manage the Fund in terms of loan disbursement and its recovery

Thus, TIFAC and SIDBI would synergize each other's core strengths and capabilities towards successful appraisal and implementation of technology innovation projects





TIFAC-SIDBI Revolving Fund

The Programme **सृजन (SRIJAN)** was launched on **November 01, 2010** jointly by Secretary-DST and Managing Director, SIDBI

Objectives

- To facilitate commercialization / scaling-up of innovative technologies in terms of novel process / product development
- To bridge the gap of financing for proving techno-economic feasibilities of commercially unproven technologies in emerging areas of national importance
- To extend financial support as soft loan to Indian industries particularly MSMEs for scaling up technology innovations developed at R&D / prototype / pilot scale





TIFAC-SIDBI Revolving Fund

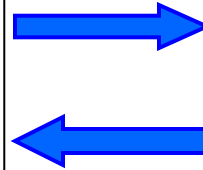
Industry - Academia Partnership

Industry

- **Technological capability & capacity building**
- **Technology absorption for reduced concept to commercialization cycle**
- **Financially attractive technology & design support compared to international sources for world-class products**
- **Credibility among users**
- **Immediate improvement in bottom line**

Academia/National Labs

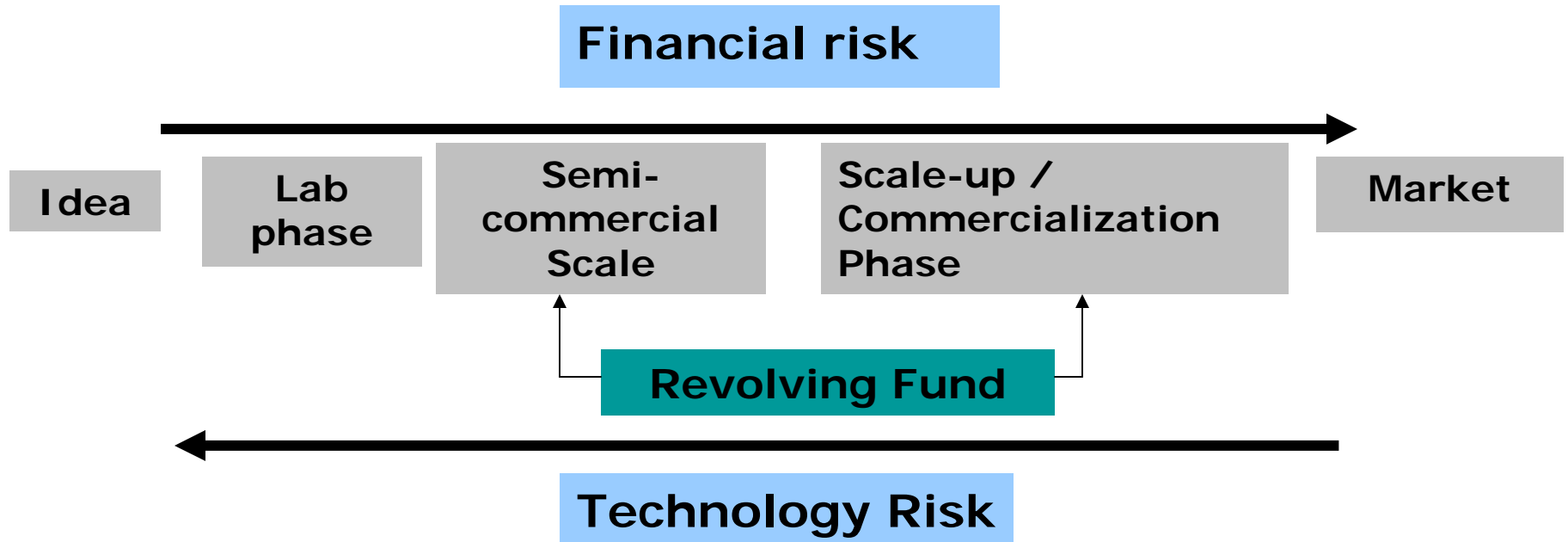
- **Knowledge shaped into usable technology**
- **Expertise scaled up into large volume production**
- **Exposure to industrial operations & user needs for developing marketable products / processes**
- **Attractive consultancy compensation; repeated for technology replication**



...A Win-Win Concept

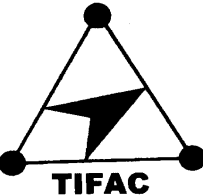


Commercialization / Scaling-up of Technology Innovations



To bridge the gap between lab and scaling up across disciplines

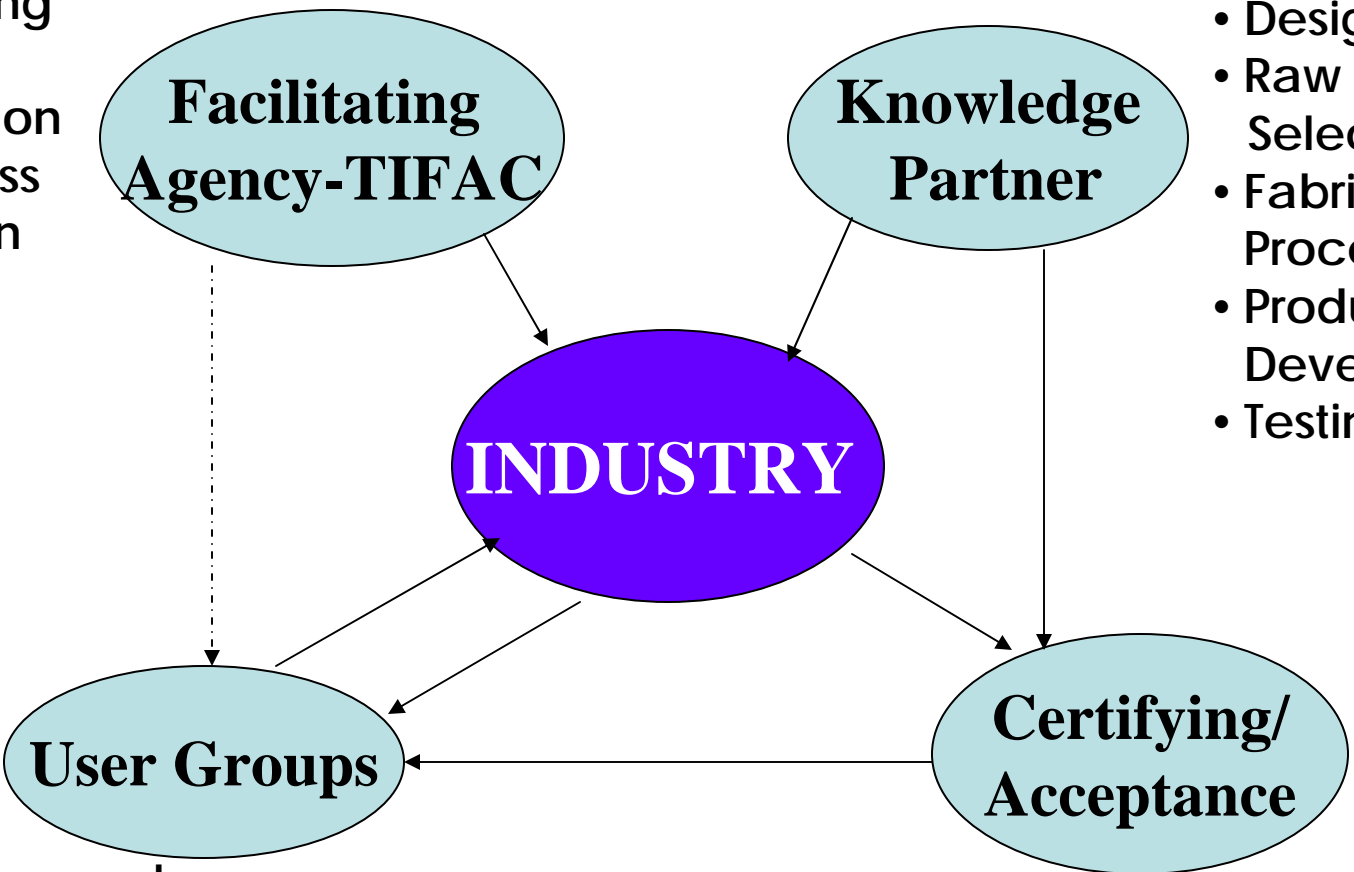




Model for Innovation

Commercialization of Technology : Proven Network

- Networking
- Market Intervention
- Awareness Promotion
- Financial Support

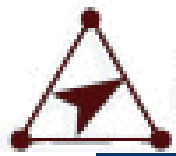


- Design Support
- Raw Material Selection
- Fabrication Process
- Product Development
- Testing

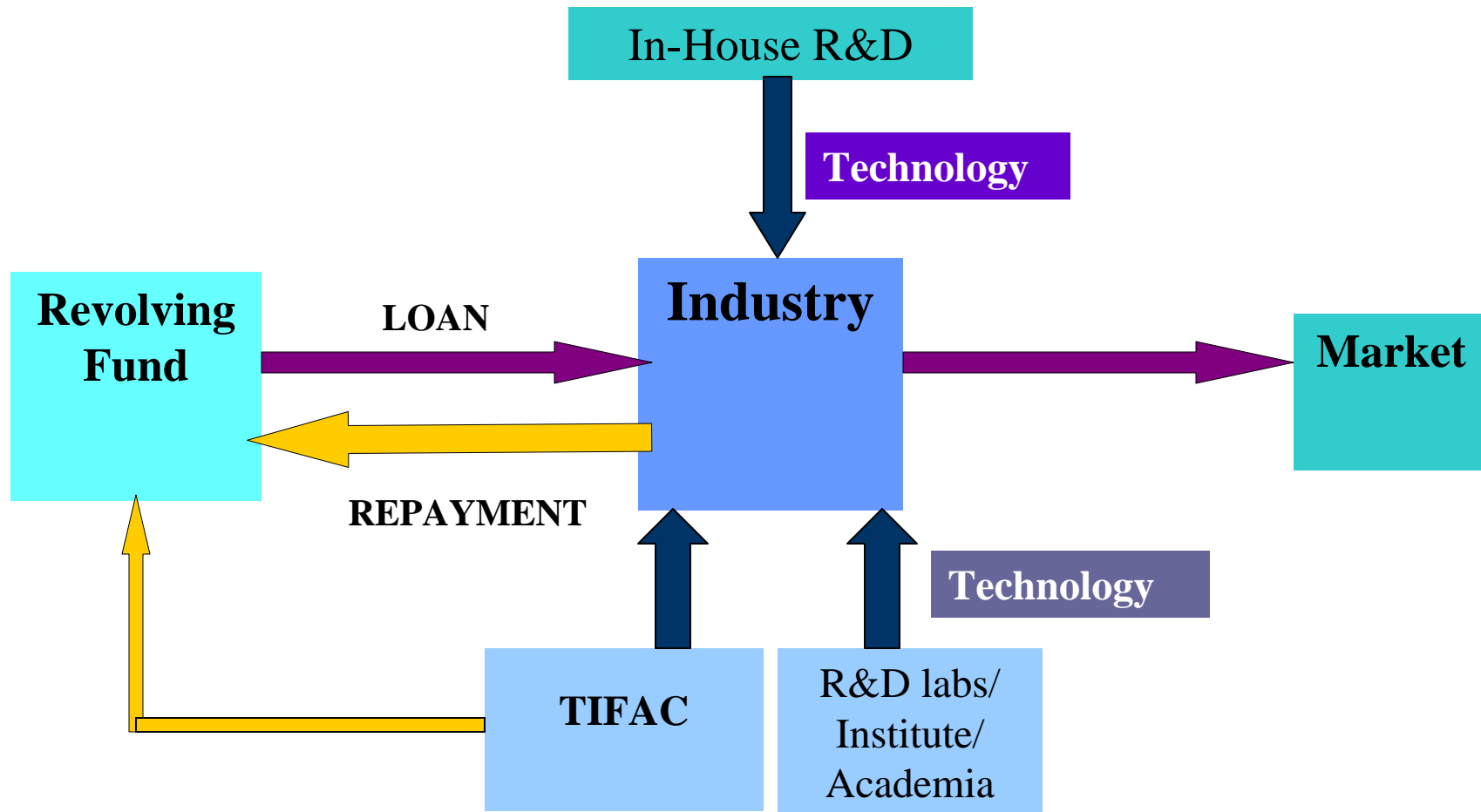
- Design Approval
- Field Trials
- Dev. orders

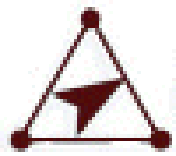
- Design & Product Approval





Technology & Fund Flow

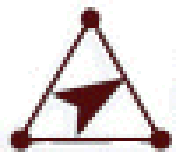




Nature of Projects Looking For.....

- Proposed technology should be novel / innovative / unique vis-à-vis existing state-of-the-art technologies
- Scaling up of novel process / product / application / new design for the first time in the country
- Significant improvement / modifications in existing process / product
- Clear departure from the existing technologies
- Substantial up-gradation in product quality, reduction of raw material consumption, reduction of energy consumption, reduction in GHG emission, reduction in cost, improvement in productivity and yield etc.
- Benefits of the technology innovation to be tested & validated from recognized certifying agencies
- Technologies which are developed at lab scale / prototype scale and not yet proven in commercial scale
- Adaptation / modification of imported technology to make it suitable for wider domestic application
- Novelty either patented or applied for patents or licensed from technology provider with technology transfer agreement





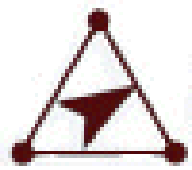
Criteria for Appraisal

Project proposals will be evaluated based on their scientific, technological, commercial and financial merits

The evaluation criteria includes:

- Innovation content / uniqueness / novelty in process or product
- Advantages of the proposed technology over the existing technologies
- Potential for wider replication and impact of the technology in broader terms
- Technical feasibility and commercial viability of the proposed technology commercialization
- Capability of the technology know-how partner
- Organizational and commercial capability and track record of the enterprise / entrepreneur seeking assistance
- Justification of the scope, proposed cost, duration and financing pattern.
- Relevance of the proposed objectives, targets and mile-stones.





Beneficiaries

Entities

Commercial Enterprises / Partnership Firms

Private Limited Companies

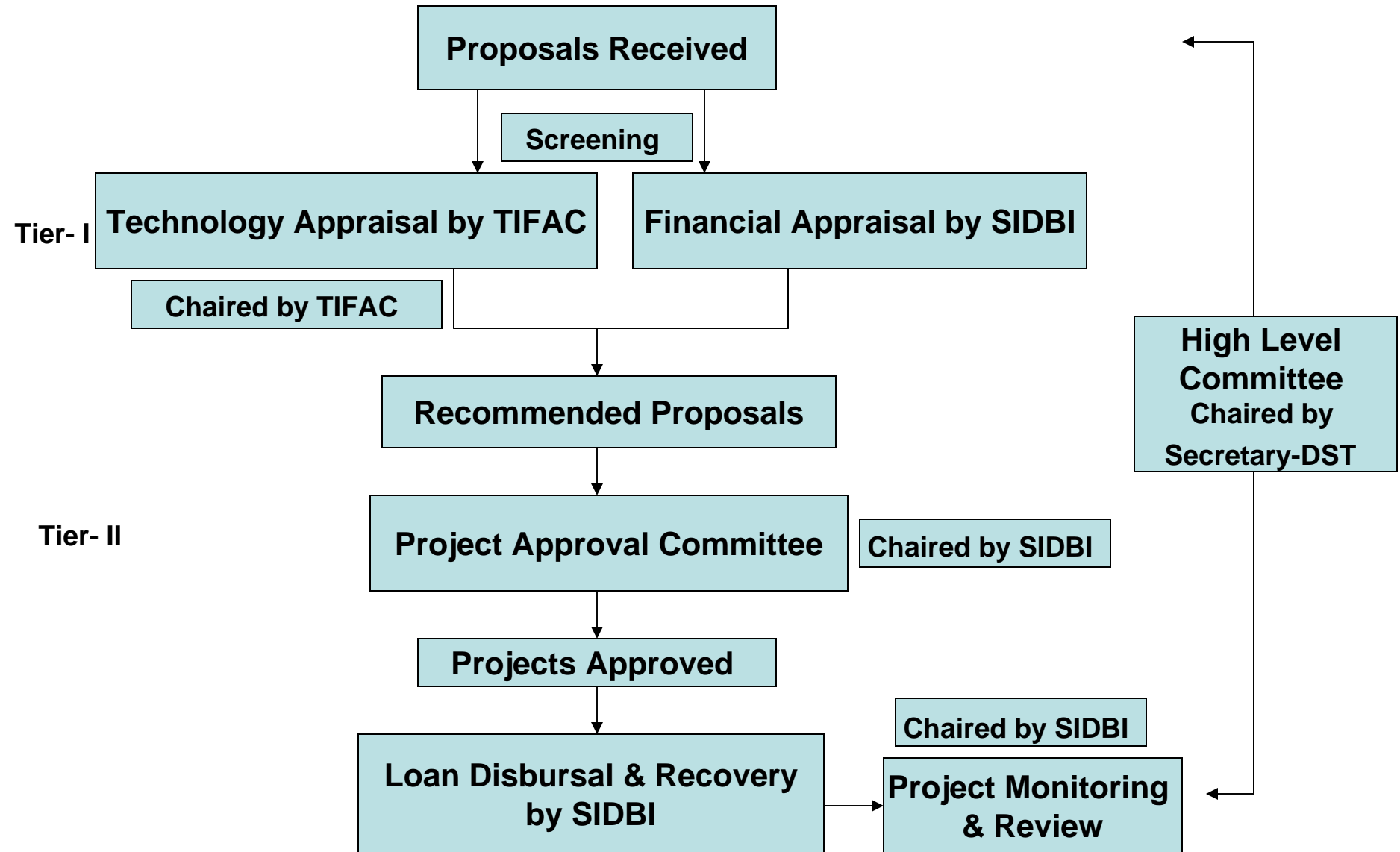
Public Limited Companies

Start-up Companies





Appraisal, Approval & Monitoring Mechanism





Monitoring & Review Mechanism

- Each project would be monitored & reviewed by separate Project Review Committees comprising domain experts
- The Project Review Committee would monitor & review the followings:
 - progress of a project at various stages of implementation as per envisaged milestones
 - physical & financial progress of the project
 - would suggest mid-course corrections, if any
 - recommend to SIDBI for disbursal of funds
 - steer the project towards successful completion
 - would declare successful completion of a project





Revolving Fund

- **Fund Quantum:** ₹ 30.00 Crores (₹ 10.00 crores already placed with SIDBI)
- **Fund Period:** 10 years
(extendable further subject to review by High Level Committee)
- **Fund Management:** SIDBI manages the Fund on behalf of TIFAC for disbursement and recovery
- **High Level Committee:** Chaired by Secretary-DST would review the entire Programme & performance of Fund and would recommend for further extension of Programme, enlargement of Fund or fore-closure of the Programme

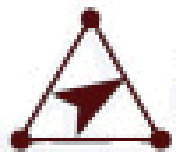




Salient Features of *सृजन (SRIJAN)*

- Development Loan on flexible terms & conditions
- Assistance up to ~ 80% of total project cost with minimum ~ 20% contribution from promoter
- Loan assistance normally not more than ` 100 lakhs for each project
- Rate of Interest not more than 5% p.a.
- Repayment in easy installments spacing over 5 years from date of completion of project
- Security through personal guarantee, hypothecation of assets created / to be created under the project, collaterals, CGTMSE guarantee

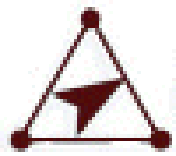




Agreements

- **Technology license agreement between R&D lab / institution / technology provider and industry**
- **Loan agreement between industry and SIDBI towards fund disbursement by SIDBI and repayment by industry**
- **Security of assets through hypothecation and personal guarantee in favour of SIDBI**

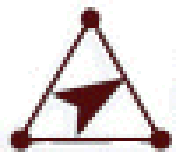




Rights of Know-how

- Any know-how generated during implementation of the project to be shared with TIFAC and SIDBI
- Any revenue generated through technology transfer to any other company/firm to be shared in the proportion of contribution till the entire loan assistance along with accrued interests repaid to the FUND as per agreed schedule of repayment.

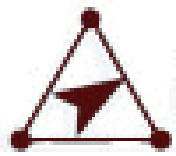




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Case Studies

Composite Products



FRP Toilets



FRP Gear Case



Under Slung Water Tank



Composite Road Tanker



Composite House Boats





Case Studies

Bioproducts

Bioconversion of racemic molecules to pharma ingredients

(NCL-Pune & Hi-Tech Biosciences Lab, Pune)

- Synthesis of three high-value, low-volume stereospecific/chiral products by biotransformation route

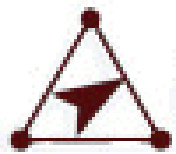
Selling Price of Products

11-hydroxy canrenone: INR 30,000/kg

Eplerenone : INR 0.25 million/kg

S-Indolene-2 carboxylic acid : INR 22,000/kg





Case Studies

Bioproducts

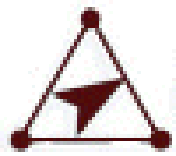
Bioconversion of racemic molecules to Prostaglandins
(*Hygeia Labs. & NCL-Pune*)

Prostaglandins find applications in congenital heart disease, pulmonary hypertension, treatment of glaucoma, healing of gastric/duodenal ulcers etc.

Innovations Involved

- o Process based on cheap and easily accessible microbial sources
- o Biotransformation technology patented by NCL
- o Highly efficient process with desired levels of chemical and optical purity of product





Case Studies

Bioproducts

Stevioside from Stevia leaves
(**Stanpack Pharma Pvt. Ltd., Mumbai**)

Stevioside from Stevia Leaves



Zero calorie natural sweetening agent (200-250 times sweeter than sugar), excellent compatibility with beverages with cardio-tonic and anti-oxidant effects necessary for endurance sports



Objective

To develop & optimize a low-cost efficient enzymatic extraction process for Stevioside & Lycopene of very high quality to conform to stringent international benchmarks





Initiatives & Progress

➤ Promotional Initiatives

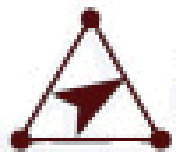
➤ So far about **fourteen** proposals received

➤ After internal screening, **four** short listed proposals formulated in final shape and appraised by Technology Appraisal Committee

➤ **Three** proposals technically recommended and forwarded to SIDBI for further financial appraisals

➤ **Two** proposals approved by the Project Approval Committee





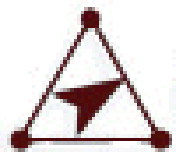
TIFAC-SIDBI Revolving Fund

Application Format

Proposals to be submitted in the prescribed application format to tifac.sidbi@gmail.com

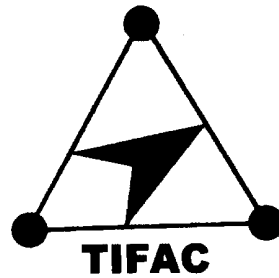
For details, please visit: www.tifac.org.in





TIFAC-SIDBI Revolving Fund

Thank You



tifac.sidbi@gmail.com

basakpr@tifac.org.in

www.tifac.org.in