



Demonstration model of Soleckshaw launched on 2<sup>nd</sup> October 2008 at the hands of Ms. Sheila Dikshit, Chief Minister, NCT Delhi. Shri Kapil Sibal, Minister of Science & Technology and Earth Sciences, presided over the launch function.

The speed of *Soleckshaw* matches a powered vehicle in downtown traffic ecosystem (~ 10-15 km/hr)

Low cost motorized rickshaw (~ Rs 16,000/-)

India need to spend Rs 1000 crore to convert 8 million traditional rickshaws into petrol-driven vehicle, it will not be sustainable. Each *Soleckshaw* is thus capable of saving Co<sub>2</sub> emission to the tune of Rs. 4,000/- per annum and total savings countrywide approximating Rs. 200 crore.

### Technology Partners

Central Mechanical Engineering Research Institute (CMERI), CSIR, Durgapur	Soleckshaw Design
Central Electrochemical Research Institute (CECRI), CSIR	Improved Battery (under development)
Central Electronics Limited (CEL)	Solar Power
Crompton Greaves Limited	BLDC motor

CSIR *Soleckshaw* technology transfer on non-exclusive basis and Indian School of Business, Hyderabad, business plan is supporting the large scale implementation plan touching the millions.

### For details contact



#### Council of Scientific & Industrial Research (CSIR)

Anusandhan Bhawan, 2 Rafi Marg  
New Delhi-110 001

Phone: 23737889

E-mail: dgcsir@csir.res.in;  
director@cmeri.res.in; directoraist@csir.res.in

# Soleckshaw

The flagship programme of the recently launched initiative of CSIR,  
**CSIR-800**



#### Council of Scientific & Industrial Research (CSIR)

Anusandhan Bhawan, 2 Rafi Marg, New Delhi, India

**S**oleckshaw, a Pedicab, is an optimally-designed, pedal-operated and motor-assisted, zero-carbon emission, urban transport vehicle. It is the flagship programme of the recently launched initiative of CSIR, **CSIR-800**—a sustained effort to utilize the fruits of cutting-edge science to improve the quality of life of 800 million Indians, who are at the bottom of the ‘pyramid of quality of life’.

### Genesis

The concept of *Soleckshaw* owes its genesis to the realization that the dignity of human labour needs to be upheld while ensuring sustainable environment and that all devices must be designed to decrease human strain and also green house gas emission.

### Technical Features

- Power source* : Solar and human
- Type of drive* : Motor-assisted pedal-driven (hybrid)
- Electric motor* : BLDC type Hub Motor 240W-36V, on front wheel
- Charging* : Solar-powered charging station
- Battery* : Deep discharge lead acid batteries
- Transmission* : Chain & sprocket drive with specially designed differential transmission
- Optional* : Two gears (for flat and inclined surfaces).
- Brakes* : Drum & shoe brake on both rear wheels; Brake on motor at front wheel
- Axle* : The entire rear axle system is mounted on a separate structure to ensure better alignment of both the axles
- Pay load* : 280 kg (Driver and two passengers)

### Futuristic Technology

- Provision for motorized assistance for haulage
- Brakes on both front and rear wheels
- Larger tread width with better tyre
- Reduction of rickshaw dead weight
- Protective cover above the puller’s head
- Ergonomically designed seats

### Societal Benefits

- Enhancing the dignity of human labour; diminishing drudgery and exhaustion involved in pulling/peddling traditional rickshaws leading to pulmonary infection
- Conserving natural petroleum resources
- Zero pollution (no exhaust fumes)
- Increasing self-employment for the urban and rural poor at grassroots level

### Target Milestones

- Currently, benchmarking is in process to evaluate and improve Mark-I model – the first version
- The Mark II model, an improved version for urban use, will follow
- An upscale version of the *Soleckshaw* will be deployed during the Commonwealth Games at New Delhi in 2010

