

## Energy Autonomy

Because of the development of sustainable energies, off-grid power production requires thorough management of energy. In this purpose, **TUNECHARGER** offers versatile energy conversion systems that provide best capture efficiency of the sustainable energies, easy coupling of many independent sources and durable batteries' duty cycle.

**TUNECHARGER** offers services and products in charging and conversion of sustainable energy, in batteries rejuvenation, and more generally in electronics and software engineering.

**TUNECHARGER** especially fits the embedded systems that require optimizing their energy management:

- Management of fluctuating energy source, like solar panels, wind turbines and any other kind of sustainable energy
- Augmentation of systems' autonomy and durability
- Integration and licensing of the **TUNECHARGER's** patented process of energy conversion
- Design and industrialisation of low-energy electronics
- Embedded software.

Universal Chargers  
for Embedded Systems



Batteries Rejuvenation



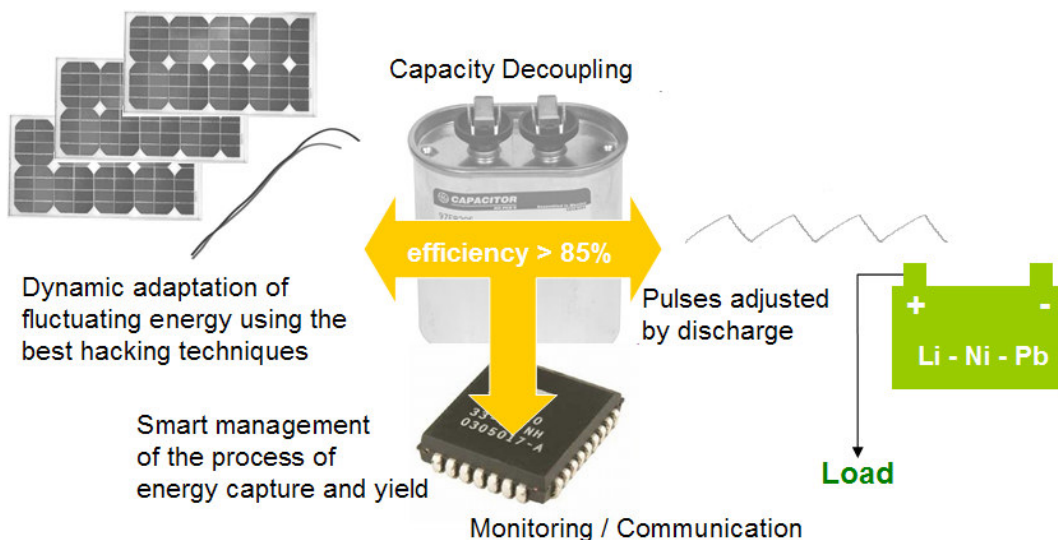
Sustainable Energy  
conversion

Electronics and  
Software  
Engineering

## TUNECHARGER's process

The **TUNECHARGER's** process performs pulse conversion that implies high-end engineering in DC/DC conversion and real-time software.

This process allows harvesting the most of incoming energy at every level of voltage. During a full day, a solar panel may thus capture 50% more energy. Moreover, many independent energy sources can easily power the same system. At the other end, when batteries are used for storage, those benefit from pulse charging that guarantees their longer durability.



## Services

**TUNECHARGER Services** gathers more than 15-years-experienced engineers in electronics and software.

Our expertise in energy conversion and batteries management offers the implementation of energy management modules that are specifically designed to tackle the constraints of autonomous systems. Our know-how in industrialization of low-energy computers also allows matching stiff operation requirements and sharp production cost demands.

**TUNECHARGER Services** uses the best practices in object-oriented software development for every micro-controllers and WINDOWS or LINUX PCs in order to obtain the best quality results.

## Batteries rejuvenation

**TUNECHARGER** commercializes under the brand **Bat4life** a range of professional tools for batteries rejuvenation.



Relying on its pulse charging process, **Bat4life** powerfully cleans up the internal crystallisation that occurs during the life of lead-acid, Ni-MH and Ni-Cd batteries. As a result of **Bat4life**, batteries recover their genuine chemical capacities and they are guaranteed to operate their optimal duty-cycle.

## Low-energy PC

Dedicated to embedded systems, the **Nano-LX** box implements the best of computers and communication buses for high ruggedness and low power < 20 W.



Equipped with a 500 MHz AMD chip and compact-flash hard disks, this PC can run W2000, WXP, LINUX or FreeDos.

Its complete range of interfaces allows the connection with every peripherals and also serial, parallel, audio, USB and Ethernet ports.

## Contact & Information

**TUNECHARGER** is member of the SYSTEM@TIC competitive cluster.

**TUNECHARGER** proceeds further research in battery rejuvenation with the French R&D centre "Institut Français du Pétrole".

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