

*Una manera de hacer Europa*



# BUENAS PRÁCTICAS

## Actuaciones Cofinanciadas

Electrification Project of the railway corridor  
Enllaç-Manacor  
Serveis Ferroviaris de Mallorca (SFM)

# Programa Operativo de Illes Balears

Año 2018

## Fondo Europeo de Desarrollo Regional



## ELECTRIFICATION PROJECT OF THE RAILWAY CORRIDOR ENLLAÇ-MANACOR

### Basic description of the project.

Serveis Ferroviaris de Mallorca (SFM) is the public company of the Government of the Balearic Islands responsible for managing the services and railway infrastructures in the Island of Mallorca.

The co-financed activity consists of the electrification of the railway corridor between the stations of S'Enllaç and Manacor in Mallorca, and involves the construction of four 1.5 kV traction substations (Manacor, Sant Joan, Petra and Enllaç) and five energy transformation centers, 34 kilometers of single-track flexible catenary and five energy transformation centers to feed the catenary with an electrical connection from the distribution network, as well as its own internal distribution network, since the distribution network of the area did not have the capacity to service the railway line until now.

Because that this railway line connects Palma with all the towns that the electrified line crosses to Manacor, the entire population residing in Mallorca will be able to benefit from the action.

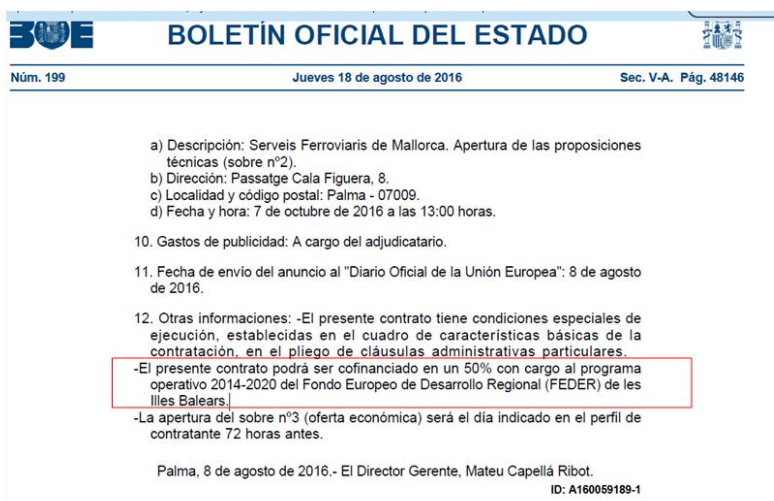
The eligible cost of the action is 26,955,192€ , of which 50% (€ 13,477,596) are co-financed by the European Regional Development Fund.

Below are the arguments that make this action a Good Practice, according to the criteria defined for these purposes.

### Criterion 1. High diffusion among the beneficiaries and the general public.

This action has been widely diffused through the different information and advertising measures developed.

First of all, the publication of the tender for the work in the Platform for Contracting of the Autonomous Community of the Balearic Islands has referred to the co-financing of the contract by the EU through the ERDF. The co-financing of the ERDF is also announced, both in the announcement of the Official State Gazette (BOE) and in the Official Gazette of the European Union (DOUE).



← Image of the publication in the Official State Gazette of the contract notice of the contract

In all the documentation related to the contracting file, the European Union logo and the reference to the European Regional Development Fund are included, as well as the mention of the co-financing under the ERDF Operational Program 2014-2020 of the Balearic Islands (in the

administrative clauses, the Report justifying the need for the contract, Reception Acts, among other documents).

Once the action has been completed, an informative plaque identifying the action developed has been placed, as established in the Application Regulation, as it is an investment with a public contribution of more than € 500,000.



Image of the documents in the file of public



Informative plaque of the electrification works of the Enllaç - Manacor Section

This visibility has been reinforced by the information contained on Serveis Ferroviaris de Mallorca's website on the different projects it promotes within the framework of the 2014-2020 Balearic ERDF PO, where this project is included:

[http://82.194.85.213/user31/SFM2013/seccions.php?register\\_vars\[sec1\]=24&register\\_vars\[sec2\]=0&register\\_vars\[sec3\]=0](http://82.194.85.213/user31/SFM2013/seccions.php?register_vars[sec1]=24&register_vars[sec2]=0&register_vars[sec3]=0)

In addition, and in order to diffuse the action, during the month of June 2018, a total of 40 Vocational Training students of the IES Felanitx and IES Manacor Public Institutes of the training course of Electrical and Automatic Installations visited the electrification works. SFM has promoted these guided tours in order to inform students about the environmental benefits of the project, and has consisted of an explanation by a company technician of the construction and operation of Petra's electrical substation and its surroundings. On the occasion of these visits, the financial contribution of the European Union in the execution of the project has also been reported.



Image of the students visit to the co-financed performance

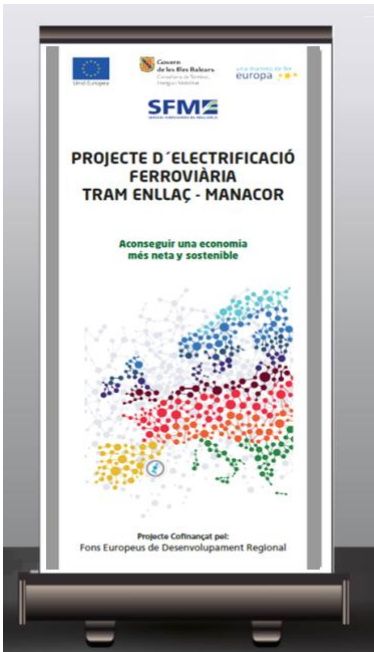


Publication of news on the web of the Government

In order to be able to inform the public about the action, emphasizing its co-financing by the European Union, a portable roll-up of the performance has been designed, which is used every time that an act of communication is carried out. Likewise, in the bus shelters and in the monitors inside the train carriages, images have been projected to inform of the FEDER co-financing in the project.



In addition, small size promotional material has been developed, such as external battery units for charging electronic devices that include, according the regulations, the emblem and reference to the European Union.



*Roll-up image*



*Image of the marquee*



*Image of the Power Bank Unit*

There have been several advertising campaigns in various media of the Balearic Islands. All of them, in addition, have collected information about the action implementation, from the laying of the first stone, to the progress in its execution, in the written press, as can be seen in the images included, and in the regional emissions radio and television, as you can see in the following link:

<https://ib3.org/al-juliol-els-trens-de-serveis-ferroviaris-de-mallorca-seran-totalment-electrics.html>



**Propera estació... El futur!**  
L'electrificació de la xarxa ferroviària, una realitat.

**AVÍS DE POSADA EN TENSIÓ**  
Posada en tensió a 1500 V de la línia ferroviària Enllaç-sa Pobla i altres instal·lacions associades a l'electrificació del tram.  
Tram: Des del PK 33+700 (estació d'enllaç) fins al PK 45+875 (estació de sa Pobla).  
A partir de les 00.01 h del dia 20 d'agost de 2018, els conductors d'energia (cablejat, catenària i subestacions) pertanyents al tram Enllaç-sa Pobla, entre el PK 33+700 (Enllaç) i el PK 45+875 (sa Pobla), s'hauran de considerar en tensió. S'advertix tot el personal afectat i el públic en general que qualsevol contacte amb aquests conductors, tant directament com mitjançant ferros, filferros, peces metàl·liques o qualsevol altre element conductor, pot provocar la mort per electrocució.

**AVISO DE PUESTA EN TENSION**  
Puesta en tensión a 1500 V de la línea ferroviaria Enlace-Sa Pobla y demás instalaciones asociadas a la electrificación del tramo.  
Tramo: Desde el PK 33+700 (estación de Enlace) hasta el PK 45+875 (estación de Sa Pobla).  
A partir de las 00.01 h del día 20 de agosto de 2018, los conductores de energía (cableado, catenaria y subestaciones) pertenecientes al tramo Enlace-Sa Pobla, entre el PK 33+700 (Enlace) y el PK 45+875 (Sa Pobla), deberán considerarse en tensión. Se advierte a todo el personal afectado y al público en general que cualquier contacto con los citados conductores, tanto directamente como mediante hierros, alambres, piezas metálicas o cualquier otro elemento conductor, puede provocar la muerte por electrocución.

CONSELLERIA TERRITORI, ENERGIA I MOBILITAT  
 Fons Europeu de Desenvolupament Regional  
 SFM

In the same way, several informative notes have also been prepared on this subject, which have been published in the news section of Balearic Island's Government website.

**SALA DE PREMSA**

28 juny 2017 | CONSELLERIA DE TERRITORI, ENERGIA I MOBILITAT

**El conseller Pons i els batles posen la primera pedra de l'inici de les obres de l'electrificació del tren fins a Manacor** NOTA INFORMATIVA

**El conseller Pons i els batles posen la primera pedra de l'inici de les obres de l'electrificació del tren fins a Manacor**

*El conseller destaca que en 12 mesos els ciutadans tindran un servei de tren més ràpid, més còmode i amb més freqüències en els seus desplaçaments*

News about the laying of the first stone on 06/28/2016



## La electrificación del tren estará finalizada a principios de verano

La inversión de 40 millones la aportan a partes iguales el Govern y los **fondos Feder de la UE**



News in the newspaper El Mundo of February 20th, 2018

## El tren eléctrico hasta Manacor y sa Pobla será una realidad en 2018

► Hay un superávit de 13 millones por la falta de inversiones en 4 años  
► La obra se financiará con **fondos propios del Govern y ayudas de la UE**

**Al margen**

**SFM ahorrará 630.000 euros al año**

La electrificación del tren permitirá ahorrar 630.000 euros al año. Así lo informó el conseller de Mobilitat, Marc Pons, que detalló que ahora, con el diesel, se gastan 660.000 euros en combustible y cuando esté electrificada toda la red el coste será de 30.000 euros. También se dejarán de emitir 630 toneladas de CO2.

El coste total de la obra será de 47 millones de euros que se financiará al 50% a través de fondos propios del Govern balear y de la Unión Europea (UE). El vicepresidente del Govern, Biel Barroiló, señaló que la puesta en marcha de la electrificación del tren hasta sa Pobla y Manacor «supondrá avanzar en un objetivo importantísimo: la movilidad sostenible».

La obra empezará a principios de 2017 y tendrá un plazo de ejecución de 12 meses. Consistirá en la instalación de una catenaria en los tramos que actualmente no están electrificados y en la construcción de seis subestaciones.

Los usuarios del ferrocarril de sa Pobla y Manacor tendrán que bajarse en la estación Enllaç para cambiar de tren hasta el 2018. Cuando, al fin, las vías estarán electrificadas.

La licitación para realizar las obras se ha avanzado un año gracias al superávit de 13 millones de euros de Serveis Ferroviaris de Mallorca (SFM). El conseller de Territori i Mobilitat, Marc Pons, indicó ayer, durante la presentación del proyecto, que «la falta de inversiones en la red ferroviaria durante los últimos 4 años permiten ahora ejecutar la electrificación del tren y avanzar un año».

de tracción, que serán las que suministrarán la energía a la catenaria.

A pesar del inicio en unos meses de esta obra, el vicepresidente Barroiló dejó claro que «el actual Govern continuará exigiendo al Estado español que cumpla los compromisos adquiridos con los convenios ferroviarios, compromisos que se dejaron de cumplir con el Gobierno de Mariano Rajoy», explicó. Es a raíz de estos incumplimientos que el Govern decidió sacar adelante el proyecto de electrificación con recursos propios y destinando parte de los 162 millones recibidos del Fondo Europeo de Desarrollo Regional.

News in the newspaper Última Hora of May 6th, 2016

Likewise, in June 2018, SFM edited a video on the execution of the work that can be seen on the YouTube channel where the logos and emblems of the EU are included. The video can be seen in this link:

<https://www.youtube.com/watch?v=v8UnCTpBtj8&feature=youtu.be>

The fourth issue of the Bulletin of European Funds in the Balearic Islands will also include information about the project and the ERDF contribution in its execution, paying special attention to the results achieved thanks to this investment.

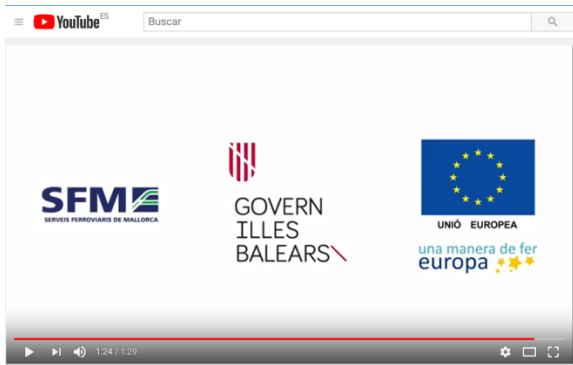


Image of the project audiovisual on Youtube

ALUMNES DELS INSTITUTS DE FELANITX I MANACOR VISTEN LES OBRES D'ELECTRIFICACIÓ DEL TREN, OBRA COFINANÇADA PER LA UNIÓN EUROPEA



Alumnes dels instituts públics I.E.S. Felanitx i I.E.S. Manacor han visitat les obres d'electrificació del tram Enllaç-Manacor. En troca de 40 estudiants de formació professional del Cicle Formatiu de Grau Mitjà en Instal·lacions Elèctriques i Automàtiques.

amb la mateixa impetència i els detalls d'agosta obra i destacar els beneficis mediambientals del projecte com a conseqüència del curs d'energia utilitzada, de les mesures d'estalvi energètic i de la reducció dels efectes contaminants a l'atmosfera. També s'ha fet constància de la financiació en un 50% amb càrrec al Fons Europeu de Desenvolupament Regional (FEDER) de l'acció en el marc del PO FEDER 14-20 de les Illes Balears.

La visita ha consistit en una explicació detallada sobre la construcció i funcionament de la subestació elèctrica de Poca i els seus voltants. Després la visita, els alumnes han pogut comprovar in situ com els consumidors energètics de les instal·lacions s'apliquen directe en una obra i la importància que tenen les diferents disciplines que formen part d'un projecte d'agosta engegada.

Serveis Ferroviaris de Mallorca ha organitzat aquestes visites guiades amb l'objectiu de donar a conèixer als estudiants de cicles formatius relacionats.



Bulletin of European Funds in the Balearic Islands (No. 4, December 2018)

Finally, another way of dissemination is the mapping system for co-financed projects of the DG European Funds, located on this website. ([http://www.caib.es/sites/fonseuropeus/ca/portada\\_2016/?campa=yes](http://www.caib.es/sites/fonseuropeus/ca/portada_2016/?campa=yes)). This online application, which is accessible to anyone, allows us to visualize, not only the geographical location of the investment, but also offers systematized data on the name, scope of intervention, co-financing fund, EU aid, total eligible cost and even images of the investment made.

Direcció Passeig de s'Estació, 07500 Manacor  
Posició 39.570400;3.202500

Eix	Operació	Pressupost	Imatges
EP4 Afavorir el pas a una economia baixa en carboni en tots els sectors 4.5.1 Foment de la mobilitat urbana sostenible: Transport urbà net, transport col·lectiu, connexió urbana-rural, millores de la xarxa viària, transporti ciclista, per als vianants, mobilitat elèctrica	ELECTRTREN-002 Electrificació de la línia ferroviària ENLLAÇ-MANACOR	Inversió 32.507.281,90 Subvenció 26.955.192,24 Ajuda 13.477.596,12	

Sumatori

Inversió	32.507.281,90
Subvencionable	26.955.192,24
Ajuda UE	13.477.596,12

Mapa de Mallorca amb punts de localització: Peguera, Magaluf, El Arenal, Campos, Colonia de, Cala Millor, Calés de Mallorca, Cala D'or.

Image of the location system for co-financed projects of the Balearic Islands

All these actions allowed all investment target groups to have first-hand information about the development and results of the project.

#### Criterion 2. Incorporation of innovative elements.

The main innovative element of the used technology allows an annual energy saving of 25% and reduces up to 30% of the maintenance costs of the trains in comparison to the diesel units.

In addition, remote telecontrol units and a medium-voltage ring of 15 kV have been installed, which allow permanent monitoring from the control center in case of a power failure. Optical fibre has also been extended along the way in order to be able to pass the information.



#### Criterion 3. Adaptation of the results obtained to the established objectives.

The start-up of the project means a great advance for the users since the transshipment has been eliminated, the travel time has been reduced, it has supposed a considerable increase of the comfort for the passengers, since the electric train implies a diminution of noises and vibrations. In addition, it has meant greater reliability in the service offered, since electric trains make it possible to offer a better service to the user.

Other results achieved have to do with the decrease in the production of waste and emissions of carbon dioxide into the atmosphere.

The implementation of this service will improve the travellers service, raising the benefits there it and reducing travel time.



#### Criterion 4. Contribution to the resolution of a regional problem or weakness.

Between the thirties and the sixties of the twentieth century, Mallorca was one of the most railway islands in the Mediterranean. For decades, the railroad was permanently at risk of disappearing and its progressive collapse was initiated by automobile competition. The generalized motorization of the population, and the tourist boom that moved the main economic activity of the island from the interior to the coasts, were responsible for the last wave of line closures.

The transport sector in the Balearic Islands is the main consumer sector of energy (58%) and uses liquid petroleum products as a fuel, practically in its entirety. It is aimed at reducing greenhouse gas emissions and increasing energy self-sufficiency, the electrification of the railway line has made it possible to achieve environmentally sustainable transport, by replacing diesel with electricity, as well as reducing the use of private vehicles.



Till the date, the railway network of Mallorca was electrified from Palma to the station of S'Enllaç and from this section to the Manacor station had to change trains, which caused great discomfort for passengers, loss of safety and quality of service.



All this has enabled the reduction of energy consumption, the reduction of pollution in urban and rural environments and the promotion of sustainable mobility in Balearic Islands.

Currently, with the important weight of tourism in the insular economy, the railway lines do not provide service to the coastal cores that generate mobility. Therefore, it is about bringing the railroad to the main population centres so that they can benefit from the advantages of the railway throughout the whole year, (work trips, studies, leisure ...), becoming a real alternative to the use of the private car.

In addition, this action will reduce the notorious deficit of public transport infrastructures suffered in Balearic Islands, improving the connectivity of the affected municipalities (Inca, Sineu, Petra, Sant Joan and Manacor) with the rest of the municipalities of Mallorca.

Criterion 5. High degree of coverage of the target population.

Rail transport is used by 6.5 million passengers per year in Mallorca. In any case, the entire population residing in Mallorca will be able to benefit from the action, since it means linking Palma with all the towns that the electrified line crosses to Manacor.



The thousands of tourists visiting the Island will also benefit, since it will allow them to access the different municipalities.

The Palma-Manacor routes, that used to take 60 minutes, will be done in 50 minutes and the frequencies that used to be every 60 minutes have been converted into 40-minute frequencies.

Criterion 6. Consideration of the horizontal criteria of equal opportunities and environmental sustainability.

Railway electrification has many advantages from the environmental point of view. The main one is a regenerative braking since electric trains, unlike diesel where braking is mechanical,

can brake electrically and recover braking energy between trains (20-30% of the energy used), thus improving energy efficiency from service.



In addition to energy savings and operating costs, there is also a considerable reduction in greenhouse gas emissions by 60% (estimated at around 452 tons of CO2 per year). Acoustic emissions have also been significantly reduced and less polluting lubricants are used.

From the point of view of equal opportunities, it is important to point out that SFM has applied measures against sexist violence in public transport, by signing an agreement in August 2018 that includes a series of measures related to transport interurban public.



*Signing of the agreement between IB Dona and SFM on 08/01/2018*

The first action, which has already entered into force, is to offer discounts on transportation. In this way, women victims of gender violence have benefited since July 2 from discounts on interurban public transport trips: bus, train and metro.

On the other hand, other commitments have also been acquired, such as spreading the 24-hour telephone service of the *Institut Balear de la Dona* (IB Dona) in train stations and user service offices, train the staff in gender equality and perspective aspects adapted to their work environment to establish guidelines for action in situations of sexist and sexual assault. Nowadays, IB Dona campaigns are already being developed in stations and on the trains, and training courses have also been started.

#### Criterion 7. Synergies with other policies or instruments of public intervention.

The electrification of the Enllaç-Manacor line is an investment included in the Transport Plan of Mallorca, which is also part of an integrated urban strategy, coherent with the Insular Territorial Plan of the Island of Mallorca, approved in 2011.

The strategic nature of this project is also confirmed by its inclusion in the Plan for Renewable Energies and Energy Efficiency in the Balearic Islands, Strategies and Lines of Action, 2014, as well as in the Climate Change Mitigation Action Plan in the Balearic Islands 2013-2020 for the reduction of greenhouse gases in the islands.

It is also part of the Sectoral Transport Master Plan of the Balearic Islands, approved in 2006 and now in the revision phase, as well as the Sectorial Mobility Management Plan of the Balearic Islands, approved in June 2018.

In addition, Law 4/2014 on land transport and sustainable mobility of the Balearic Islands supports this action by establishing, as objectives for transport, its contribution to the improvement of the urban and rural environment.



Govern de les Illes Balears

Govern de les Illes Balears

Conselleria d'Agricultura, Medi Ambient i Territori

Pla director sectorial de transport de les Illes Balears

Pla director sectorial de transport de les Illes Balear

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**Fondo Europeo de Desarrollo Regional**