

FOT / ESPT 2050

# Fact sheet on the implementation of the Energy Strategy 2050 for public transport (ESPT 2050)

## 1. Background

One-third of all energy consumed in Switzerland is related to transportation. If nothing changes, this percentage will continue to grow due to rising demand. It is therefore important that this sector actively supports the Federal Council's energy strategy, which provides that the entire transport sector cut its energy consumption in half by the year 2050 and contribute to the production of renewable energy. As part of its responsibilities, the Federal Office of Transport (FOT) is tasked with spelling out the Federal Council's energy strategy in specific terms. To that end, the FOT has launched the "Energy Strategy for Public Transport 2050 (ESPT 2050)" programme.

## 2. Objectives

The FOT's strategy has the following objectives:

1. **Increasing energy efficiency:** By the year 2050, energy efficiency is to be improved by 10 to 50 per cent depending on the mode of transport and traffic environment.
2. **Opting out of nuclear energy:** In the future, traction current and power for infrastructure (lighting, power for signalling systems, switches, buildings, etc.) is to come from renewable sources.
3. **Reducing CO<sub>2</sub> emissions:** The consumption of fossil fuels for vehicles, buildings and infrastructure is to be lowered.
4. **Increasing the production of renewable energy:** The production of renewable energy is to be increased in order to replace nuclear energy and cover peaks in demand.

## 3. Approach

The objectives of the ESPT 2050 are demanding. They require that transport companies and authorities take effective and coordinated measures as regards vehicles, infrastructure and operations. In addition, the involved players must become familiar with their options for action and be able to take advantage of positive experiences. At the same time, it is necessary that effective incentives and a more consistent legislative framework support this change.

The ESPT 2050 is thus based on three principles that simultaneously form the core elements of the programme:

1. **Establishing the fundamentals:** develop incentive systems and promote the implementation of measures
2. **Operating an information network:** establish a firm basis for the data, improve the exchange of information and coordination
3. **Promoting practice:** identify, finance and support innovative projects

## 4. Fields of action

The fields of action are involved in both infrastructure and buildings as well as in vehicles and operations. To increase energy efficiency, for example, there exist opportunities in better energy recovery in trains, trams and buses. Technical improvements and optimised control of infrastructure facilities, the on-demand operation of heating, ventilation and air conditioning in vehicles as well as the procurement of lighter vehicles are also important starting points. Additionally, optimised operational management can contribute significantly to increasing energy efficiency. Along with these technical and operational measures, it should not be forgotten that the choice of mode of transport provides essential leverage.

Moreover, transport companies can improve their environmental performance by increasingly utilising energy from renewable sources. In addition, elements of facilities for public transport such as the roofs of railway stations, depots and platforms or protective walls along the rails could be used for the production of renewable energy.

## 5. Implementation

The ESPT 2050 programme was officially launched in mid-2014 and is currently in an implementation phase that is estimated to last until 2019. Based on the results of this first phase, in 2020 the Federal Council will decide on a possible extension with a timeline of 2035 or 2050.

It is the task of the FOT to create conditions that encourage the stakeholders of public transport systems to make a significant contribution to the Federal Council's energy strategy. Therefore, the FOT is establishing an information network to promote the exchange of experiences amongst the stakeholders and to catalyse the spread of innovation. Through this, the results of pilot projects and research projects supported by the FOT will be enhanced by the entire sector.

To verify the strategy's effectiveness, the FOT is monitoring energy efficiency in public transport. It regularly reports on the achievements made and the challenges ahead.

For the overall control of the ESPT 2050 programme, a monitoring committee involving the heads of all FOT departments was convened. Management of the programme lies with the Environment Section; it is supported in this task by a specialised project office.

Every year the FOT prepares a statement of suitable concepts and solicits bids for offers addressing certain topics. In this way companies and research institutes can apply for subsidies for studies and pilot projects. The supported projects must contribute significantly to ESPT 2050 objectives; preference is given to entries that are characterised by high efficiency, a high degree of innovation and potential for implementation which is clear and useful for other stakeholders of public transport.

## 6. Costs and effect

For the successful implementation of the ESPT 2050 the FOT has at its disposal approximately CHF 3.5 million per year from 2014 through 2020. The transport companies supported by the FOT contribute to that with in-house activities which are at least equal in value and so the effectiveness of government expenditures is multiplied.

In comparison to a "business as usual" scenario, more than 600 GWhr/yr can be saved in public transport by 2050. This equals the electricity demand of approximately 150,000 households, in other words a medium-sized Swiss community.

## 7. Facts and figures

### Energy consumption

With 85 TWh/yr, the transportation sector is responsible for over one-third (37%) of energy consumption in Switzerland.<sup>1</sup> (Fig. 1)

- of that, about half (53%) can be attributed to motorized private transport on roads (Fig. 2)<sup>2</sup>
- the proportion of public transport and rail freight with about 5 TWh amounts to just 5.5% (Fig. 2)<sup>3</sup>

TWh	%	
85	37	Transport
65	28	Households
43	18	Industry
38	16	Services
2	1	Statistical Difference

Fig. 1: Percentages of energy consumption from various sectors in Switzerland

TWh	%	
2	2	Public transport on rails
2	2	Public transport on roads
1	1	Rail freight transport
45	53	Motorized private transport
10	12	Freight transport on rails
19	22	Air traffic
6	7	Residual

Fig. 2: Percentages of energy consumption from various modes of transport

### Transport services

- Motorized private transport is responsible for three-quarters (75%) of all passenger kilometres on Swiss territory, while public transport on rails and roads (19%) amounts to about one-fifth (6% = non-motorized traffic).<sup>4</sup>
- For freight transport the services are more balanced, with 62% of the ton-kilometres on roads and 38% on rails.<sup>5</sup>

### Energy efficiency

- Public transport is about three times as energy efficient as motorized private transport (per pkm).<sup>6</sup>
- In the case of freight transport this factor is almost ten.<sup>7</sup>

### Renewable energy

- Currently about 90% of the traction current for the BLS and the SBB come from renewable sources<sup>8</sup>.
- The SBB produces around 2'000 GWh of traction current from hydropower every year.<sup>9</sup>
- Every year the Swiss Post produces 5 GWh of solar power, the SBB 1 GWh.<sup>10</sup>
- Roofs and open spaces provide another important potential for the generation of solar power; the potential of the SBB is estimated to be about 25 GWh/a and that of the Swiss Post is estimated to be about 6 GWh/a.<sup>11</sup>

## Sources:

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11. Antwort des Bundesrates auf die Interpellation 15.3264 (Hadorn)

## 8. Further information

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