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TOP MOTOR

4

IMPACT ENERGY

energy

MOTOR SUMMIT 2020

International

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SWISS POLICY ON ELECTRIC MOTOR SYSTEMS



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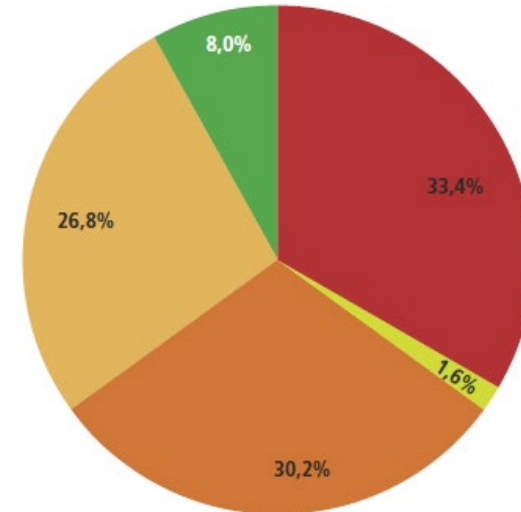
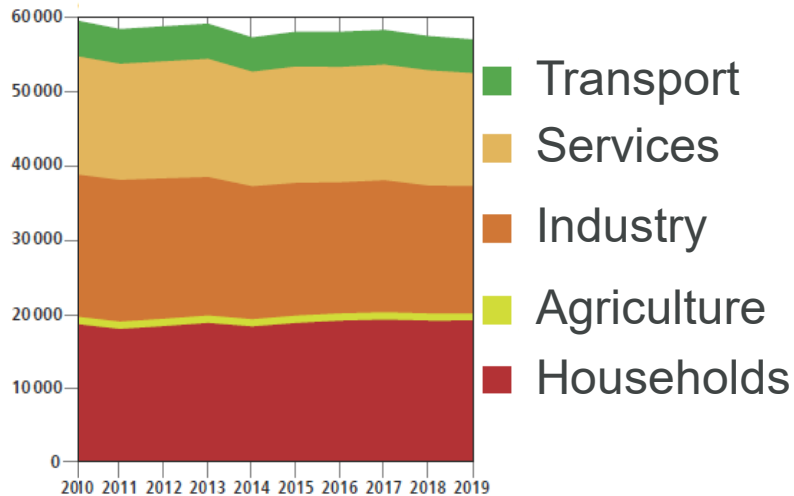
ENERGY STRATEGY 2050

- In May 2017, Swiss voters approved the Energy Strategy 2050
- By 2050, Switzerland should not emit more CO2 than what can be stored at the same time
- Swiss electricity production 2019
 - 31.8% Storage power plants
 - 24.6% Run-of-river power plants
 - 5.8% Renewable energy
 - **35.2% Nuclear power plants**
 - **2.6% Other facilities (not renewable)**





ELECTRIC CONSUMPTION in 2019



Totally consumption 57,2 TWh

Source: **Swiss electricity statistics 2019**, Swiss Federal Office of Energy, June 2020
<https://www.bfe.admin.ch/bfe/de/home/versorgung/statistik-und-geodaten/energiestatistiken/elektrizitaetsstatistik.html/>



ELECTRIC CONSUMPTION in 2019

2019 totally consumption 57,2 TWh

- **-4,3%** Compared to 2010
- **-0.8%** Compared to 2018

Despite:

- **Development of the economy**
+0.9% $G_{\text{ross}} D_{\text{omestic}} P_{\text{roduct}}$
- **growing of population**
+0.7% compared do 2018
- **Weather**
heating degree days +6.1% over 2018

Source: **News and Media**, Swiss Federal Office of Energy, April 2020
<https://www.bfe.admin.ch/bfe/en/home/news-and-media/press-releases/mm-test.msg-id-78820.html>



ELECTRIC MOTOR SYSTEM: CONSUMPTION 2019

	Industry	Services	Households	
Total consumption per sector [TWh]	17.3	15.3	19.1	
% of consumption related to motor systems*	56.1 %	57.1 %	29.5 %	
Total [TWh]	9.7	8.7	5.6	24 TWh
Compared to total Swiss consumption	17%	15.2%	9.7%	41%

Sources: **Analysis of the Swiss Energy Consumption 2000 – 2018 by Type of Use**, Swiss Federal Office of Energy, Bern, October 2019.

<https://www.bfe.admin.ch/bfe/de/home/versorgung/statistik-und-geodaten/energiestatistiken/energieverbrauch-nach-verwendungszweck.html>

*Sum of Motor systems and Climate and ventilation systems

Swiss electricity statistics 2019, Swiss Federal Office of Energy, June 2020

<https://www.bfe.admin.ch/bfe/de/home/versorgung/statistik-und-geodaten/energiestatistiken/elektrizitaetsstatistik.html/>

ELECTRIC MOTOR SYSTEMS: TECHNOLOGIES

▪ Pumps	20% *
▪ Compressors (cooling)	32% *
▪ Compressors (compressed air)	6% *
▪ Rotating machines	16% *
▪ Fans and other systems	26% †
	<hr/> <hr/> 100%

* Based on potential analyses

† Estimated

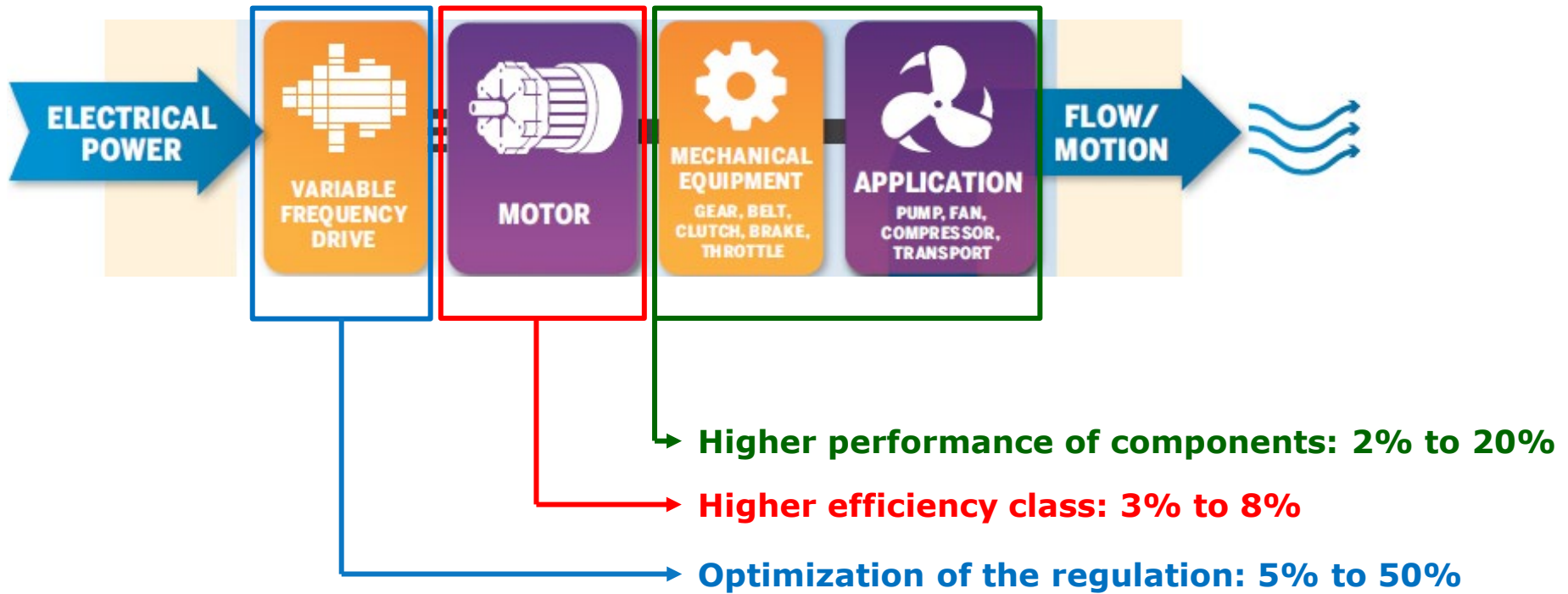


REGULATION: MEPS

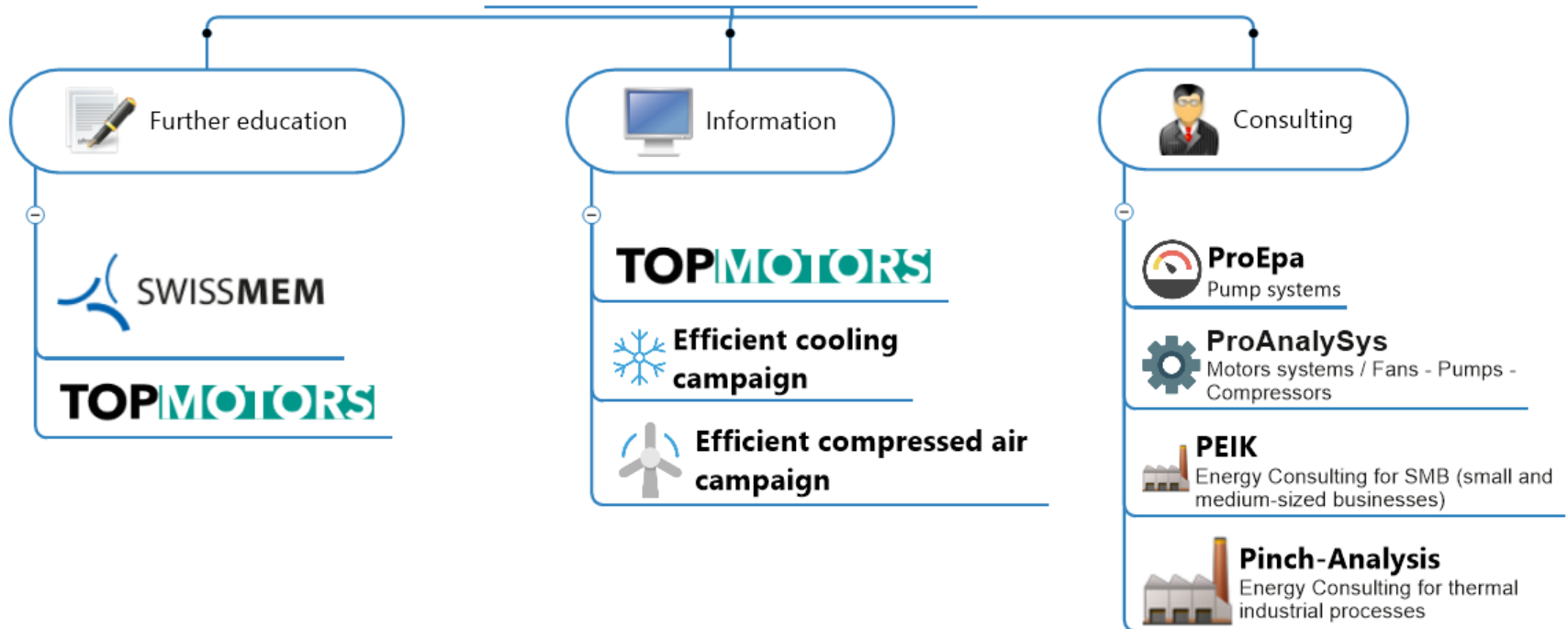
- **Electric motors (from 1.1.2017)**
 - 0.75 - 375 kW IE3 or IE2 with VSD
- **Circulation pumps**
 - $EEI \leq 0.27$ (until 31.7.2015)
 - $EEI \leq 0.23$ (from 1.8.2015)
- **Water pumps (from 1.1.2015)**
 - $MEI \geq 0.4$
- **Fans (from 1.1.2015)**
 - New “N” Value



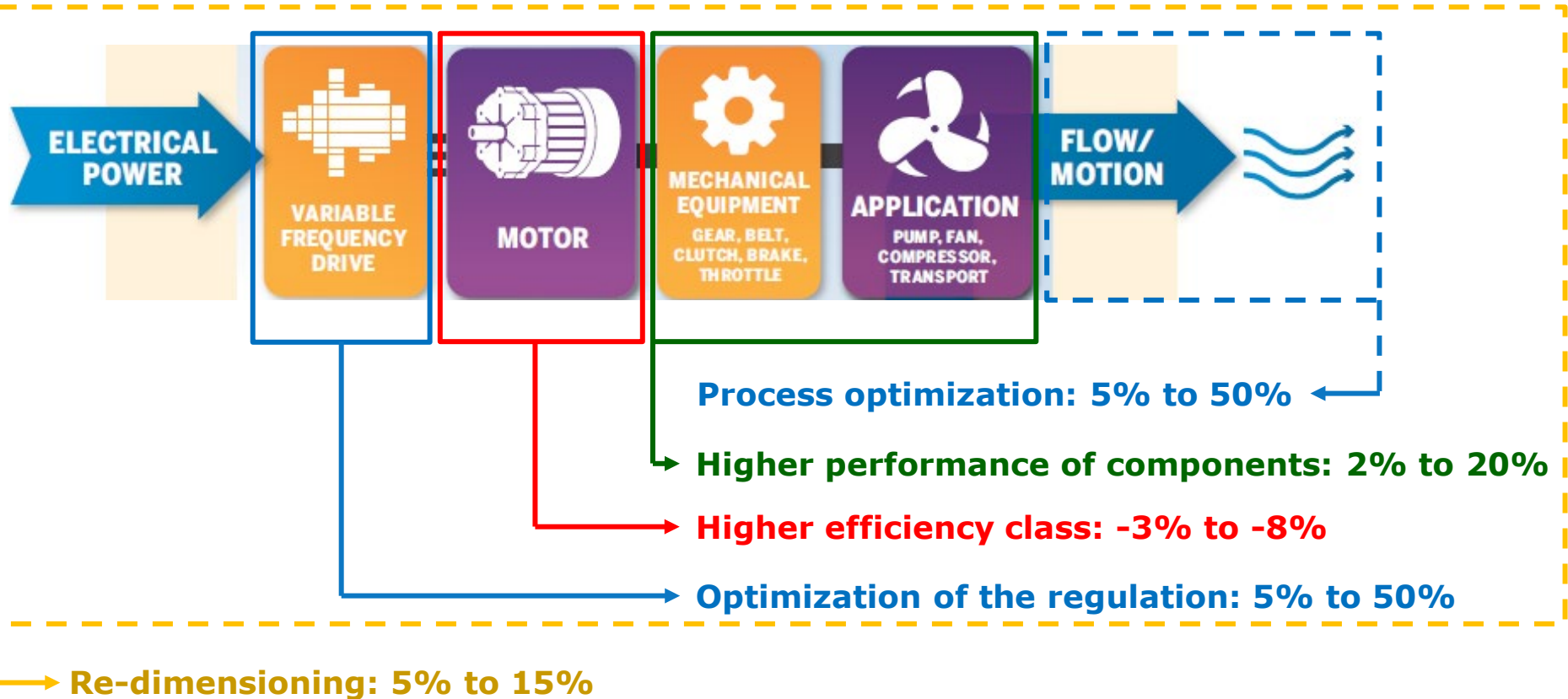
REGULATION: IMPACTS



VOLUNTARY MEASURES: PORTFOLIO



VOLUNTARY MEASURES: IMPACTS



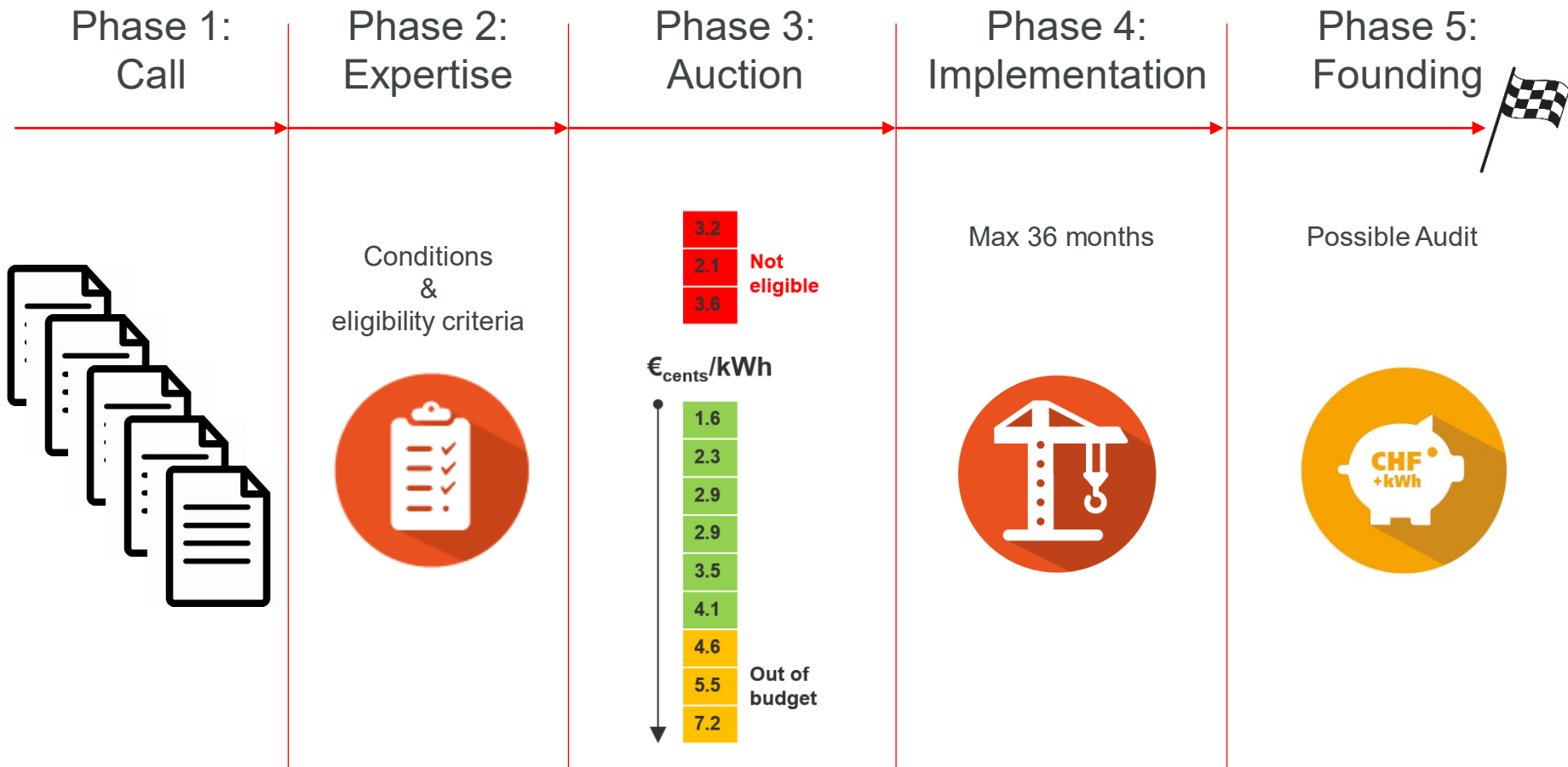
VOLUNTARY MEASURES WITH SUPPORT FOR INVESTMENT



Competitive tenders for Projects and Programs aimed at the reduction of electricity consumption in households, industry and services sector

- **Auction process**, only projects and programs with the best **cost efficiency ratio** are selected (CHF/KWh).
- **3 Calls** for project each year
- The implementation of efficiency measures is **financially supported**

VOLUNTARY MEASURES WITH SUPPORT FOR INVESTMENT



COMPETITIVE TENDERS: TOP|EU

1st step: Grant amount calculator

Nominal Power [KW]	400	▼
Type of application	Systèmes de convoyage	▼
Motor efficiency class	IE2	▼
Hours of service per year [h]	5800	

Montant provisoire de la subvention

Équipement
CF
CHF 6'510

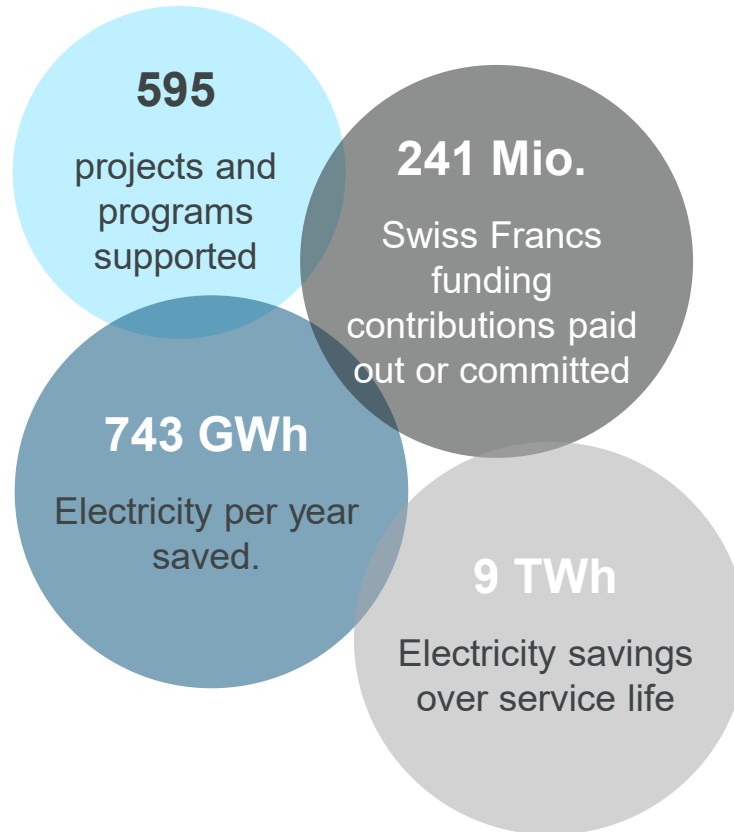
Équipement
CF + IE4 Moteur
CHF 41'070

2nd step: Registration

- After registration you will get access to the tool **Motor-Check**.
- **Motor Check** will calculate the energy and electricity cost savings per year and over the service life, payback period and the expected subsidy contribution from ProKilowatt.
- After successful implementation, the final subsidy amount will be calculated and paid out based on the real costs for materials and personnel expenses.



COMPETITIVE TENDERS: RESULTS 2010 - 2019



<https://www.bfe.admin.ch/bfe/en/home/foerderung/energieeffizienz/wettbewerbliche-ausschreibungen-prokilowatt.exturl.html/aHR0cHM6Ly9wdWJkYi5iZmUuYWRTaW4uY2gvZGUvcHVibGljYX/Rpb24vZG93bmxvYWQvODQyMA==.html>



CONCLUDING REMARKS

Regulation:
- MEPS

SwissEnergy

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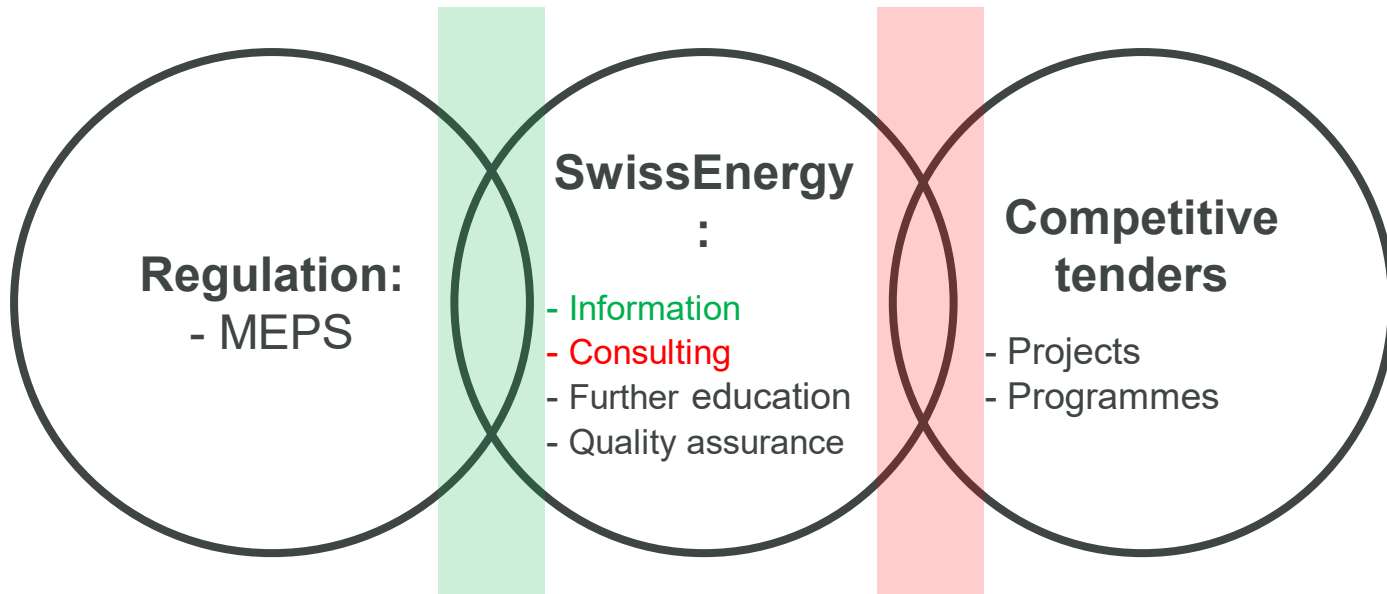
- Information
- Consulting
- Further education
- Quality insurance

**Competitive
tenders**

- Projects
- Programmes



CONCLUDING REMARKS





THANK YOU FOR YOUR ATTENTION

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