

# Direct-marketing remuneration and flexibility of small hydro

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## Context

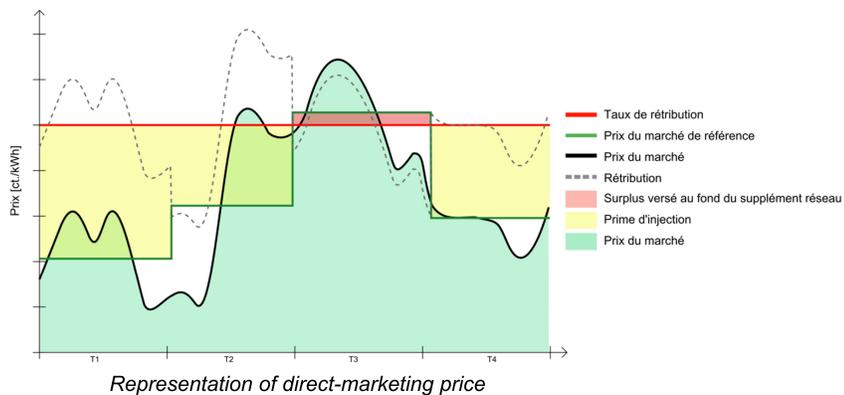
Following the acceptance of the energy strategy 2050, the energy law changes came into force on 1 January 2018, such as the Ordinance on the encouragement of renewable electricity generation (OEnER).

As part of this revision, the system of compensation at cost price of the injected current (RPC) is adapted into a system of compensation of injection (SRI1) based on two models of remuneration including direct marketing. This incentive model implies that the operators of installations must henceforth sell their electricity on the energy market.

This revision will therefore push some distributors with small hydropower plants to better predict their production and to stall at the best market price. The case study is carried out of a 2MW hydropower plant located in Icoigne (VS).

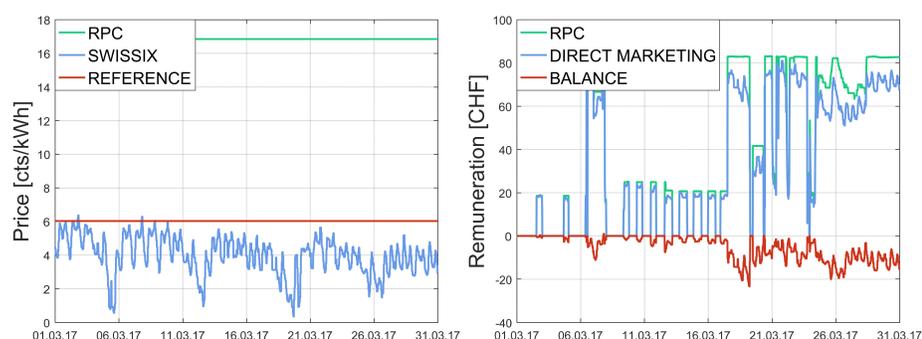
## Direct-marketing remuneration

- Have to sell the electricity themselves on the market.
- The quantity of energy produced is traded on the market by the operator itself or through a direct distributor.
- The goal is to encourage to produce and operate renewable installations according to the market.

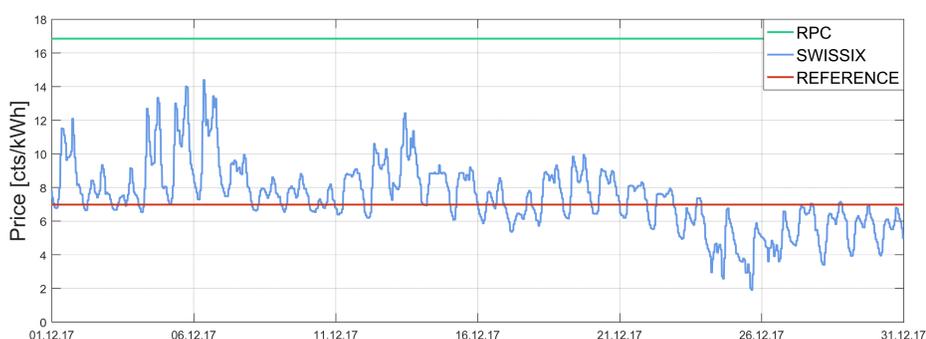


## Impacts of the direct-marketing

1) If the market price < the reference price => the distributor lose



2) If the market price > the reference price => the distributor can win

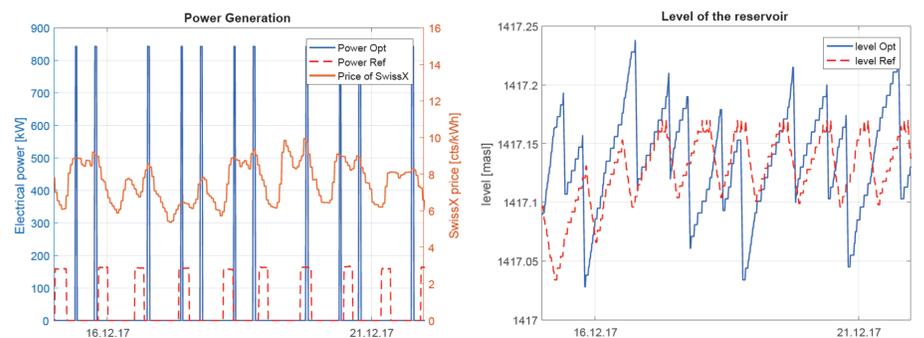


## Flexibility of the hydropower plant management

### Low peak water flow period

- Simple optimisation with ON/OFF programme
- Low cost management with daily schedule
- Based on historical market price analysis
- Flexibility with turbine flow and reservoir variation level

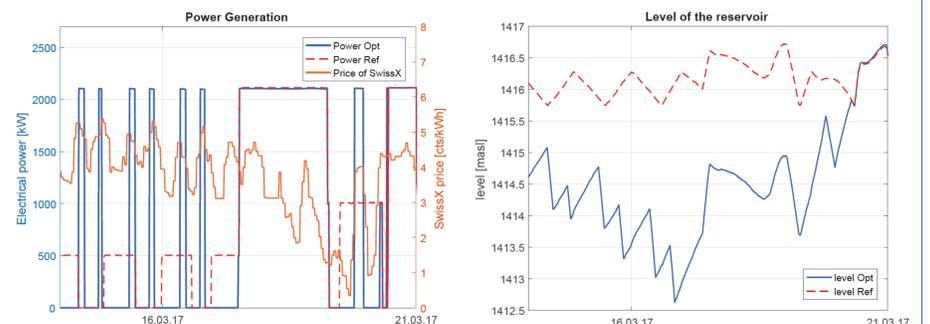
=> Increase average cost-price by 10-15%



### High peak water flow period

- Flexible production when the constraints are not reached
- Forced to produce continuously when input flow is high
- Based on historical market price analysis
- Flexibility with turbine flow and reservoir variation level

=> Increase average cost-price by 1%



## Conclusion

- Goal of direct-marketing is to encourage small hydropower plants to comply with the electricity market and to provide their injection.
- The flexibility can reduce the impact of the direct-marketing on the hydropower plant remuneration with an increase of the remuneration price by 10-15 % in winter and can absorb all the losses of all year.
- The winter period is more predictable and flexible. It's also easier to make some gains although the production represent a small part of the whole year production.

## Acknowledgements



## References

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 [2] Office Fédéral de l'énergie OFEN : Ordonnance du 1er novembre 2017 sur l'encouragement de la production d'électricité issue d'énergies renouvelables (OEnER) (Etat le 1er janvier 2018). RO 2017 7783. 2017. Bern.  
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