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# Energy and ecological transitions in the Rhône River in the context of climate change: converging or diverging transitions ?

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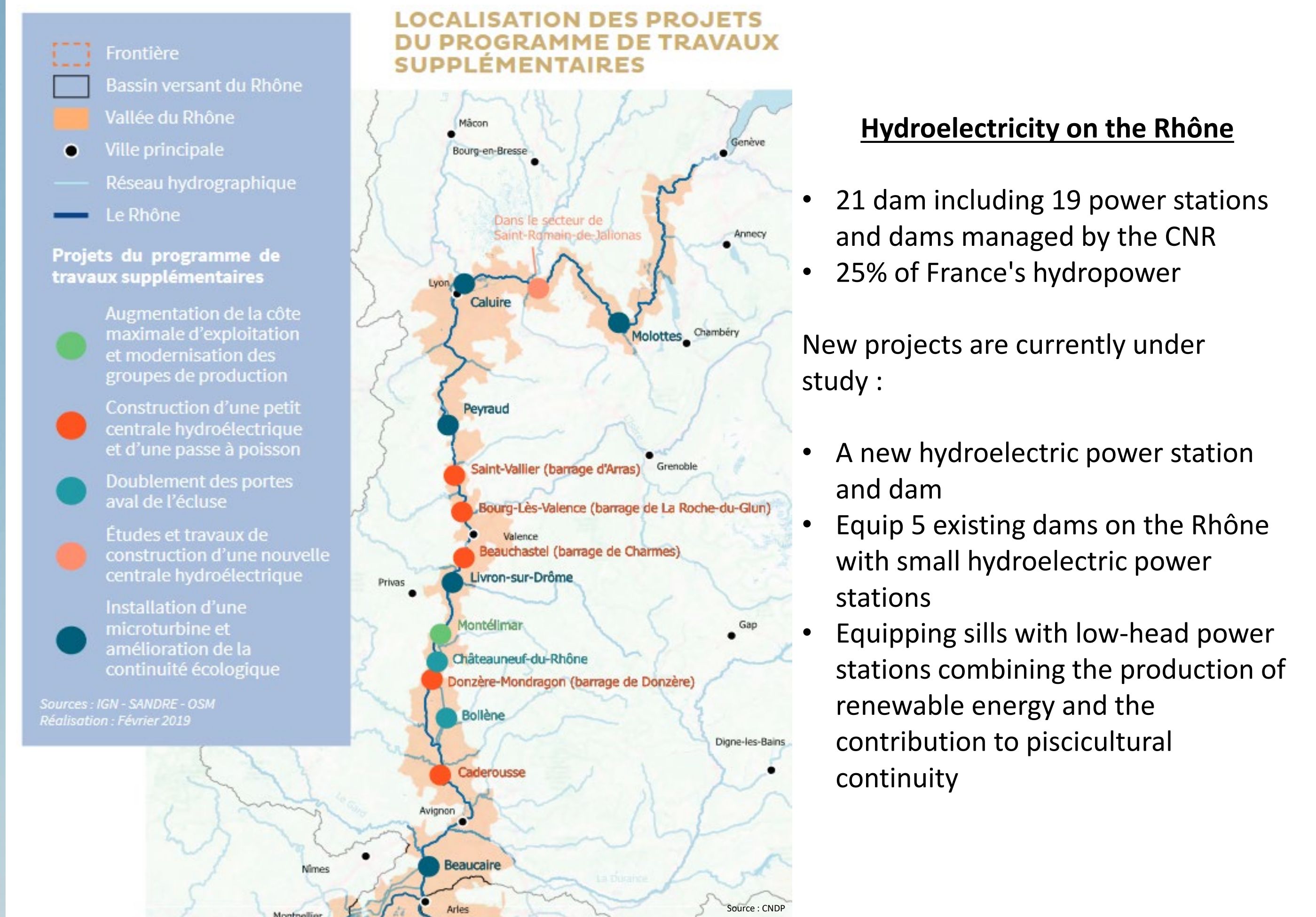
## INTRODUCTION

On the Rhone River, the composition of the installed energy stock is mainly based on hydraulic and nuclear energy. While these numerous developments already have strong impacts on the morphology of the river and its biodiversity, new hydraulic and nuclear energy production projects could take place to meet the objective of energy transition. However, a recent study into the evolution of the river in the face of climate change could overturn the way the river is currently managed.

## RESEARCH QUESTIONS

In our study, we use the concept of transition as "the passage between two supposedly stable states, by focusing on the one hand on institutional legacies and, on the other, on the actors who drive and support 'transitions'" (Aykut, Evrard, 2017). How the consequences of climate change will impact on the development of the transition project on the Rhône ? Will the environmental gains made be affected by the new energy challenges or not ? How can the concept of transition be used to discuss and take account of these potentially contradictory issues?

## THE RHÔNE, A LOW-CARBON ENERGY SOURCE



### Hydroelectricity on the Rhône

- 21 dam including 19 power stations and dams managed by the CNR
- 25% of France's hydropower

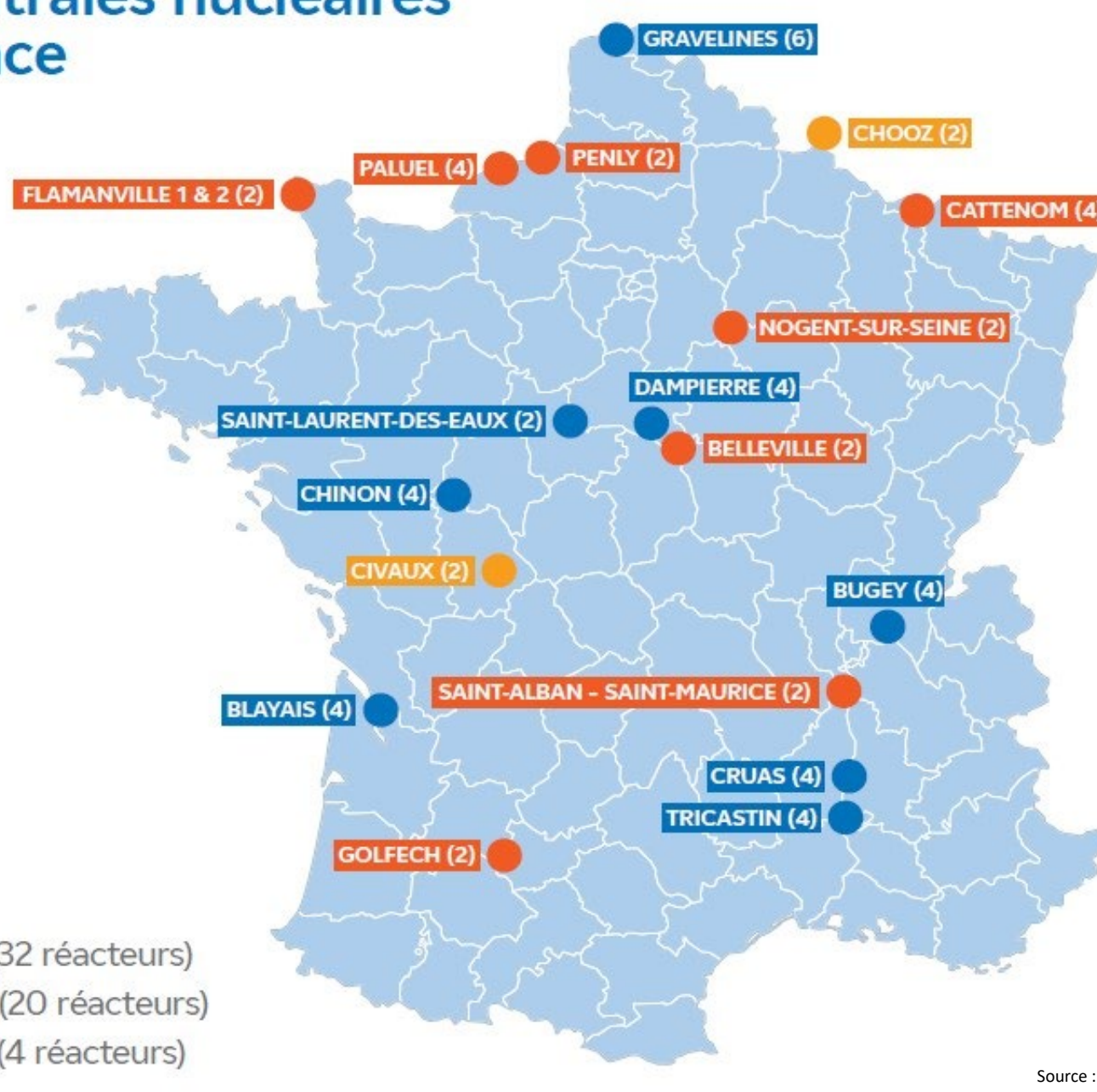
New projects are currently under study :

- A new hydroelectric power station and dam
- Equip 5 existing dams on the Rhône with small hydroelectric power stations
- Equipping sills with low-head power stations combining the production of renewable energy and the contribution to piscicultural continuity

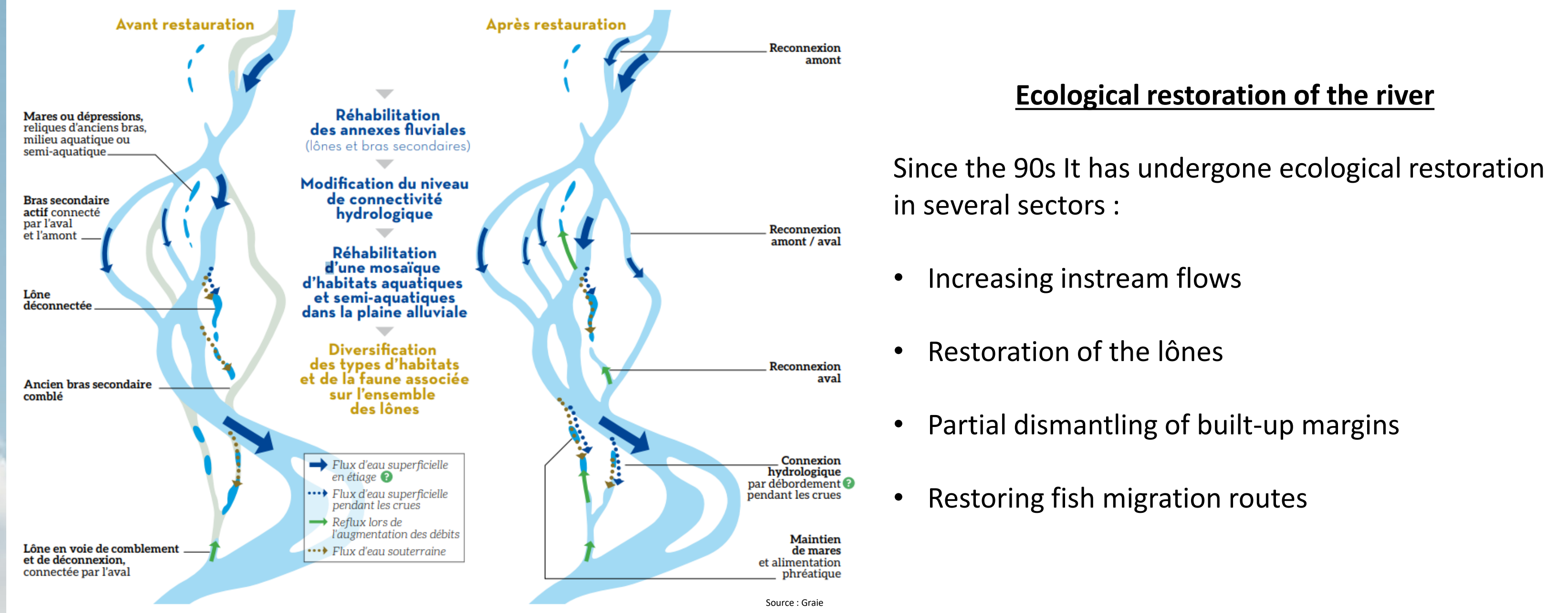
### Les centrales nucléaires en France

### Nuclear energy on the Rhône

- 4 nuclear power stations managed by EDF
- 22.4% of France's total production
- 2 new EPR2 reactors could be built at Bugey or Tricastin



## ECOLOGICAL RESTORATION IN PROGRESS ON THE RIVER



### Ecological restoration of the river

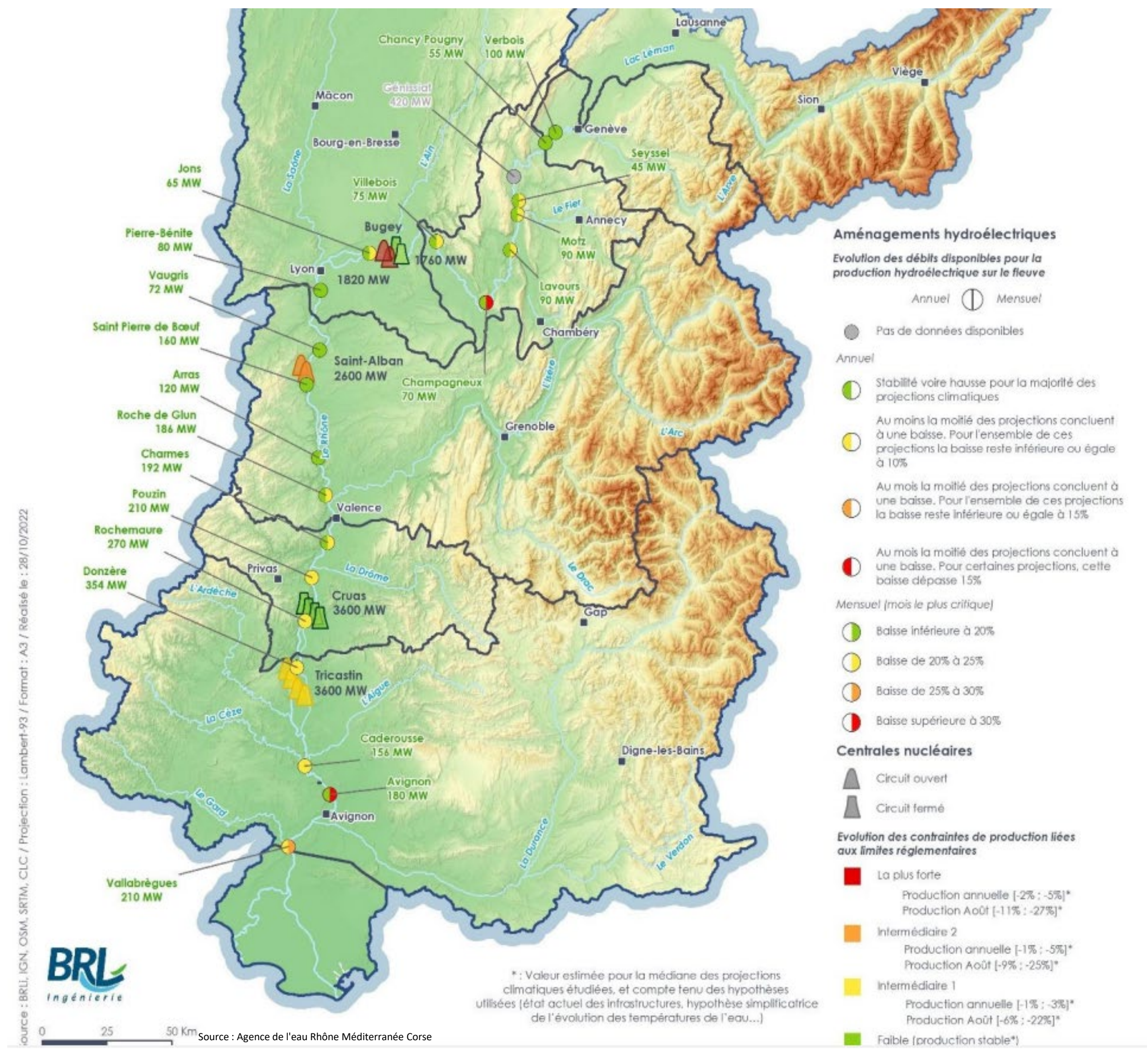
Since the 90s It has undergone ecological restoration in several sectors :

- Increasing instream flows
- Restoration of the lônes
- Partial dismantling of built-up margins
- Restoring fish migration routes

### The impact of climate change on the river and its ecosystems

The Agence de l'eau Rhône Méditerranée Corse predicts a drop in flows on the river by 2050 that will have an impact on :

- Increased operating constraints for nuclear power plants
- A reduction in the theoretical summer output of run-of-river hydroelectric installations.
- The aquatic biodiversity of the Rhône will be weakened.
- They recommend to "renaturalise" the river

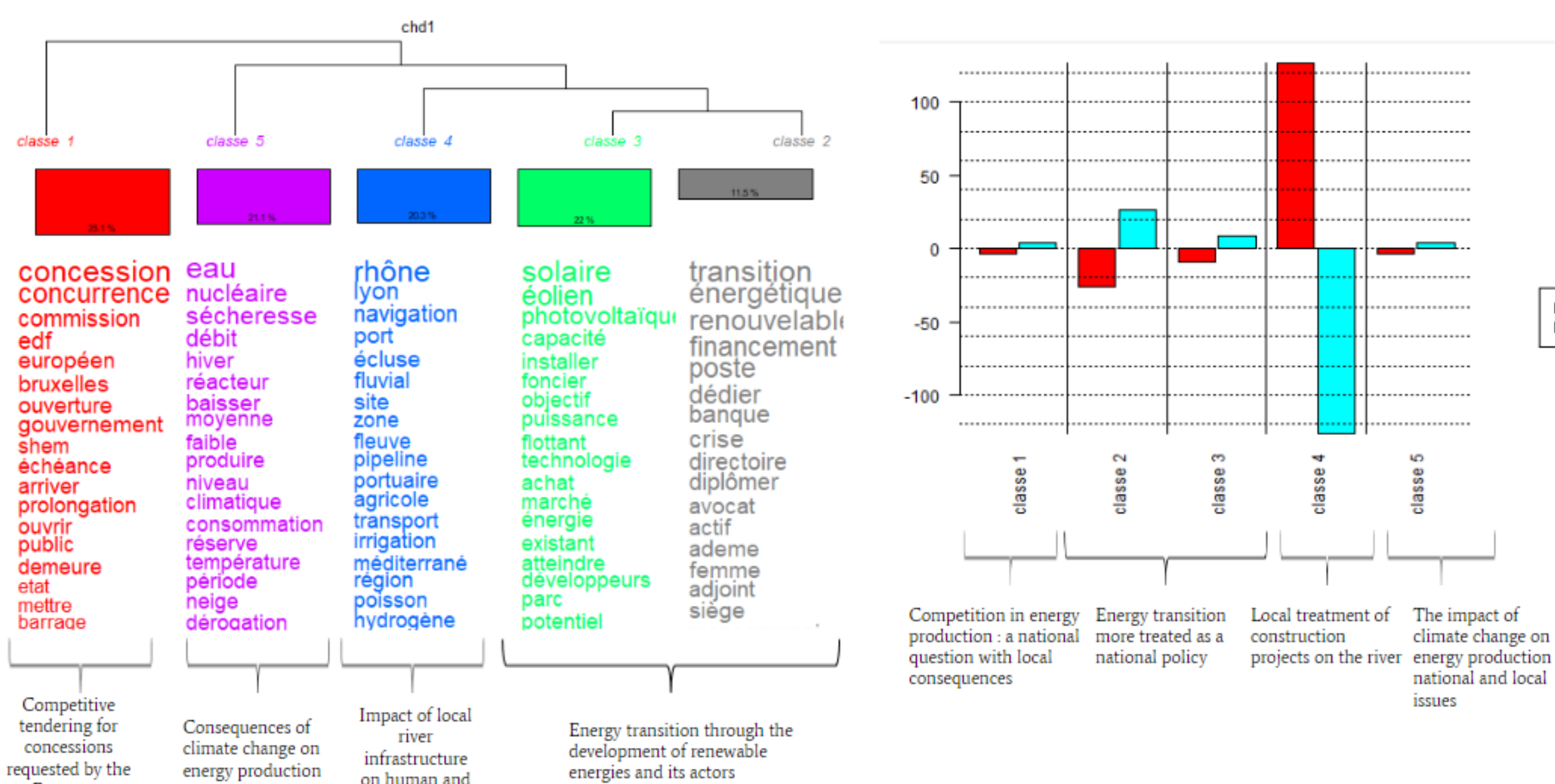


## MATERIALS AND METHODS

- Press analysis with IRaMuTeQ, a lexicometry software
- Study of the documentation from different institutions
- Exploratory and semi-structured interviews with different local stakeholder

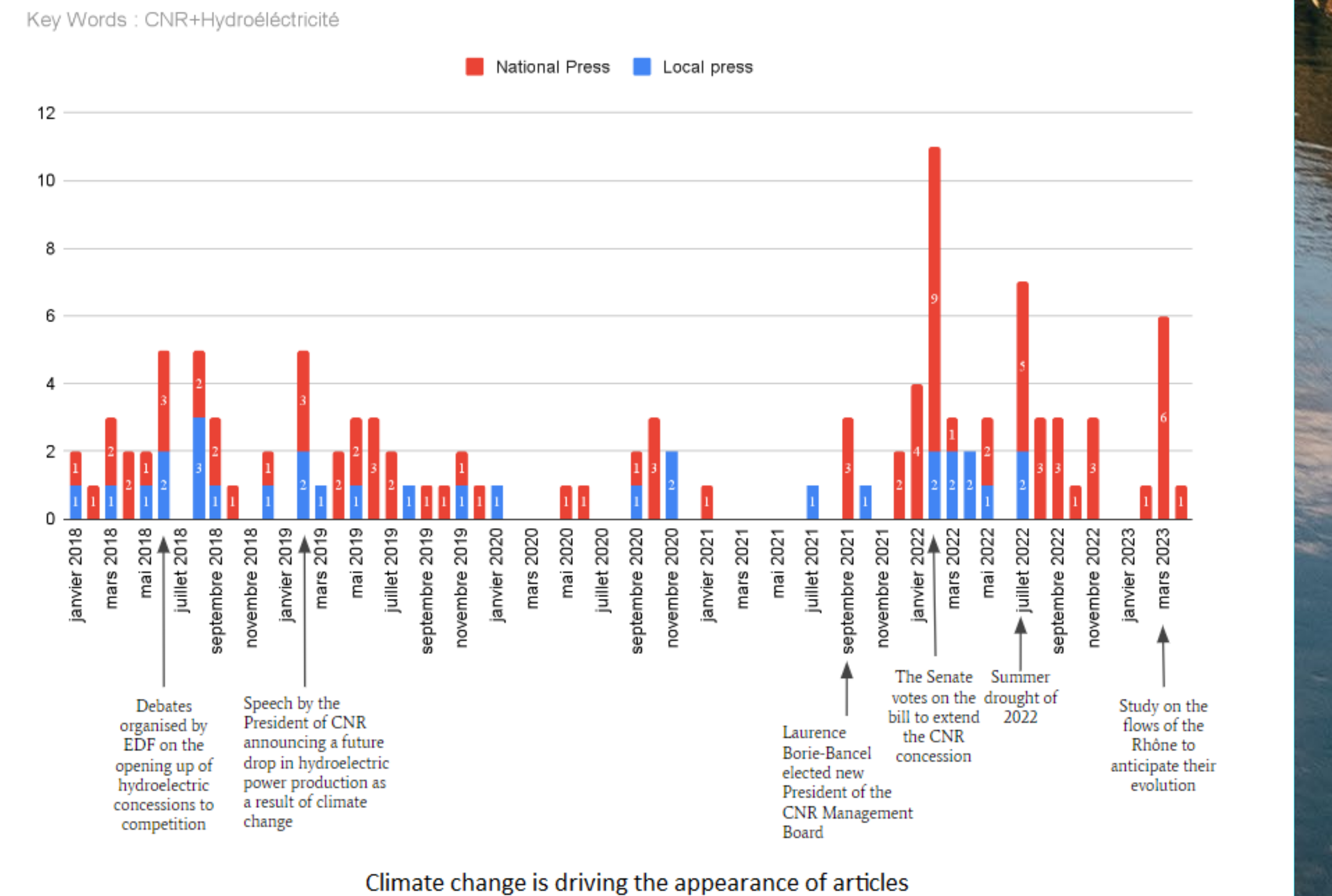
## STUDY OF THE PRESS COVERAGE OF THE RHÔNE TRANSITIONS : FROM GLOBAL TO LOCAL?

Downward hierarchical classification – Reinert method: 87,32 % of the text segments classified



Study of press articles related to CNR+Hydroelectricity: National coverage of regulatory and economic issues versus regional coverage of the impacts of future projects

### Temporal evolution of the articles' quantity on local and national scales



Climate change is driving the appearance of articles

## CONCLUSION AND OPENING

The initial results of our study show a cross-section of transition issues raised by the press in the Rhône de transition. The consequences of infrastructures on ecosystems are covered to a larger extent by the local press, and a survey of local stakeholders is planned.