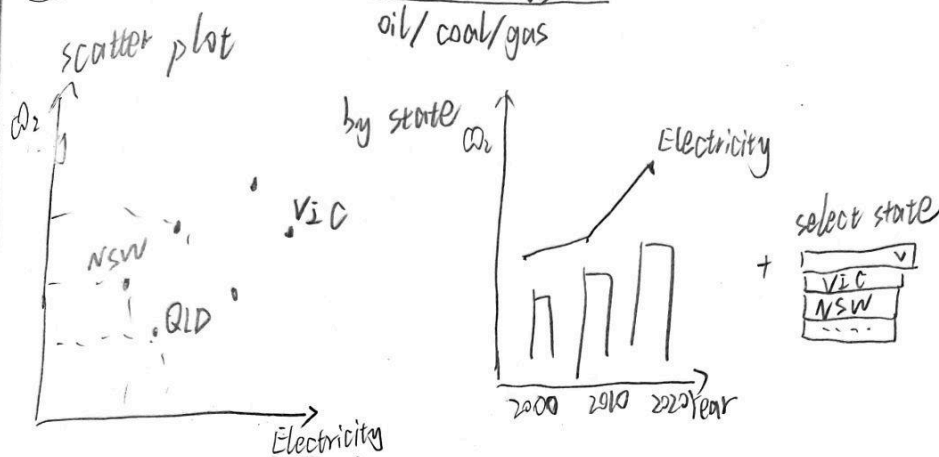Yijiang Luo 32666284

Sheet 1

IDEAS
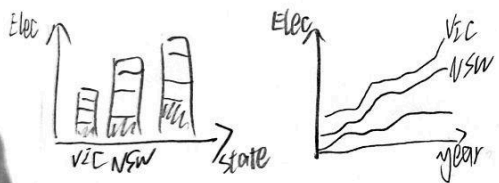
→

$CO_2 \propto$ Electric Create (nonrenewable):
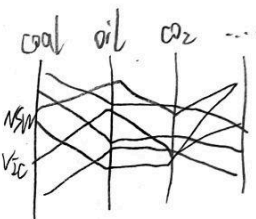oil/coal/gas
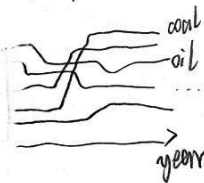
scatter plot

CO_2

NSW   ViC

. QLD

Electricity

by state

CO_2 Electricity

2000 2010 2020 year

select state

ViC
NSW

+

coal ㄲㄹㄲㄹㄹㄹ
oil ㄹㄹㄲ ㄲ
... ㄹㄹ
... ㄲ

State Energy composition:

Elec

ViC NSW   state

Elec

year

ViC
NSW

Bump Chart

coal
oil
...

year

coal oil CO_2 ...

NSW

ViC

Total Elec

oil coal solar

Green Elec Rate

100

0

CO_2 composition:

notime:

state
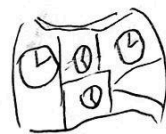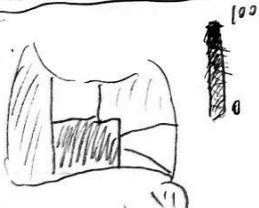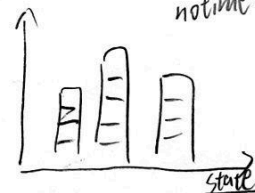
time for Aus not stat
Bump Chart

100%

year
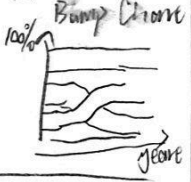
FILTER
composition:

map:

Trends

lationship:

CATEGORIZE:

Trend — CO^2
         — ELEC
composition — CO^2
            — ELEC
map
relationship
$CO^2 \propto$ ELEC

Combine:

+ 80

scatter plot
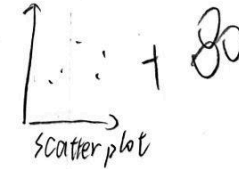
QUESTION:

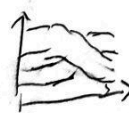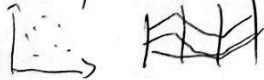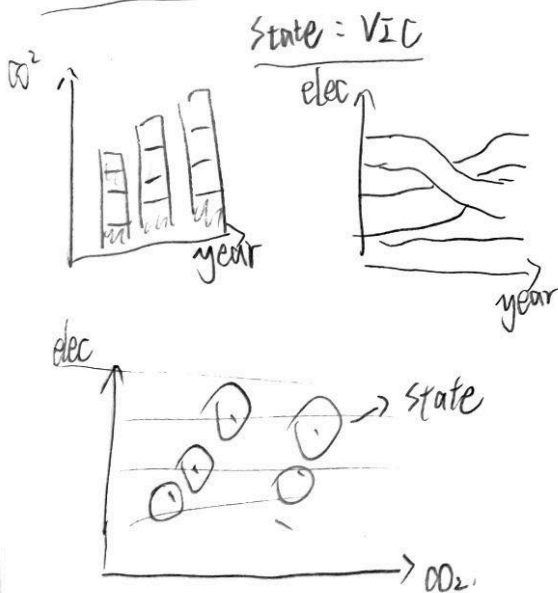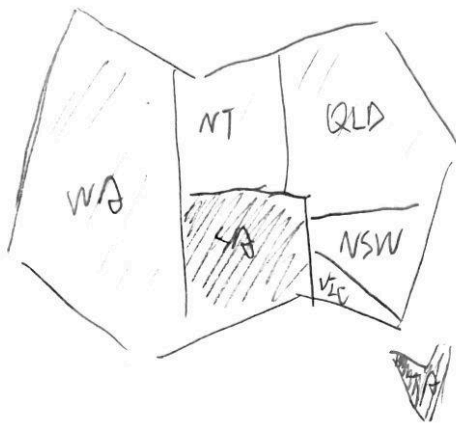1. Does it show the relationship of Elec/CO_2?

2. Does it can show the electricity composition?

3. Does it can show the CO_2 composition?

Lay out:

State : VIC

Operation:

→ when the user click the state on the map. ↓

this charts will show that state detail

also can put a slider to choose the time

Focus:

Combination of time series and maps

The core focus is on the divergent exploration of the correlation possibilities between state power generation and CO_2 emissions

Discussion:

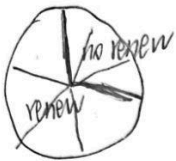Difficulty of techical implementation it can done by tableau but hard in html.
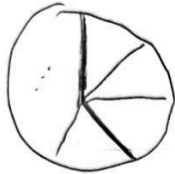
Suitable for "why same state have lower emission.

Lay out:

2023 FY

VIC

no renew

renew

NSW

SA

QLD

stack bar chart

CO_2

Energy:
xx Gw

start

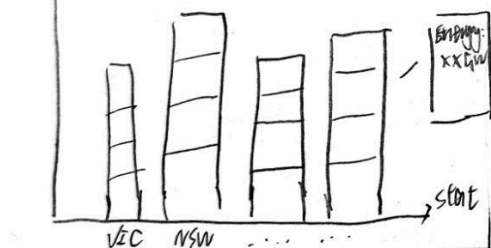VIC   NSW   ...   ..

Operation:

→ when the user hovers over a certain pie chart, the corresponding state will be highlighted on the stack bar chart, and the specific energy data tooltips of that state will be displayed at the same time

Focus:

Presenting the causality of "energy structure"
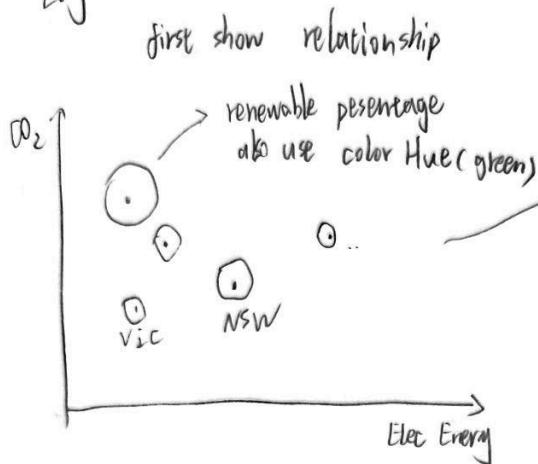
→ "emission of CO_2"

reveal" the differences in the relationship between total power generation and emissions among states with different proportions of renewable energy
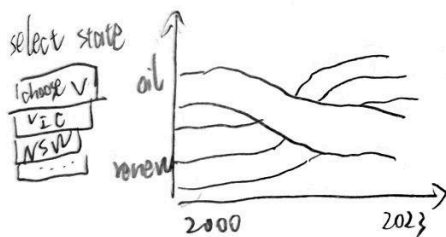
Discussion:

It is simple, direct, and has a clear structure. but the presentation of "causal relationships" relies on the user to actively make connections.

Sheet 4

张锦荣 Yijiang Luo 32666284

Layout:

first show relationship

CO_2

→ renewable pesentage
also use color Hue (green)

VIC   NSW

Elec Energy

then break down
trend from 2000 → 2023

select state

| choose ∨ |
| VIC |
| NSW |
| ... |

oil

renen

2000   2023

CO_2 im trend

Operation:

when user click on the
point in scatter plot,

It will change the state selection
on the below plot.

and also can use selection input
to change the state.

Focus:

use scatter plot to focus on the
causal presention of "energy structure
emission logic"

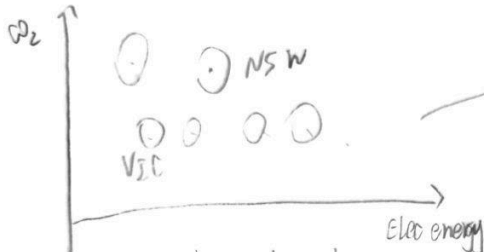also show the green energy development
in AUS

Discussion:

if ask the higher the power generation,
the more emissions? the scatter
plot is the most target.

suitable for the exploration needs of
data analysis - oriented user.
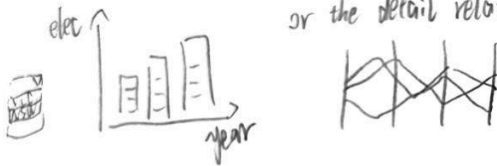
Sheet 5
Yijiang Luo 32666284

Layout:

1. show relationship 2023

2. show where have green power 2023

Operation

→ when user click on a state on the chart, the data for that state will be highligh. like the tableau.

there has a select input for select the state for more detail.

3. show generation detail and trend or the detail relation use:

4. show Aus CO_2 emission trend

Focus

this focus on the whole story telling on step by step.
1. proportion of clean energy
2. the detailed components of energy
3. the trend of change in the energy structure
4. the overall trend of CO_2

Detail:

* Extract and clean data
* state name can add to map
* Vega-lite may can not do the same thing like tableau, need javascripts
* time to build it: 1 week.