The Kukkuroinmäki Biogas Plant (in Lappeenranta, Finland)

Fuel from local waste!

Etelä-Karjalan Jätehuolto Oy
Hyödyksi!

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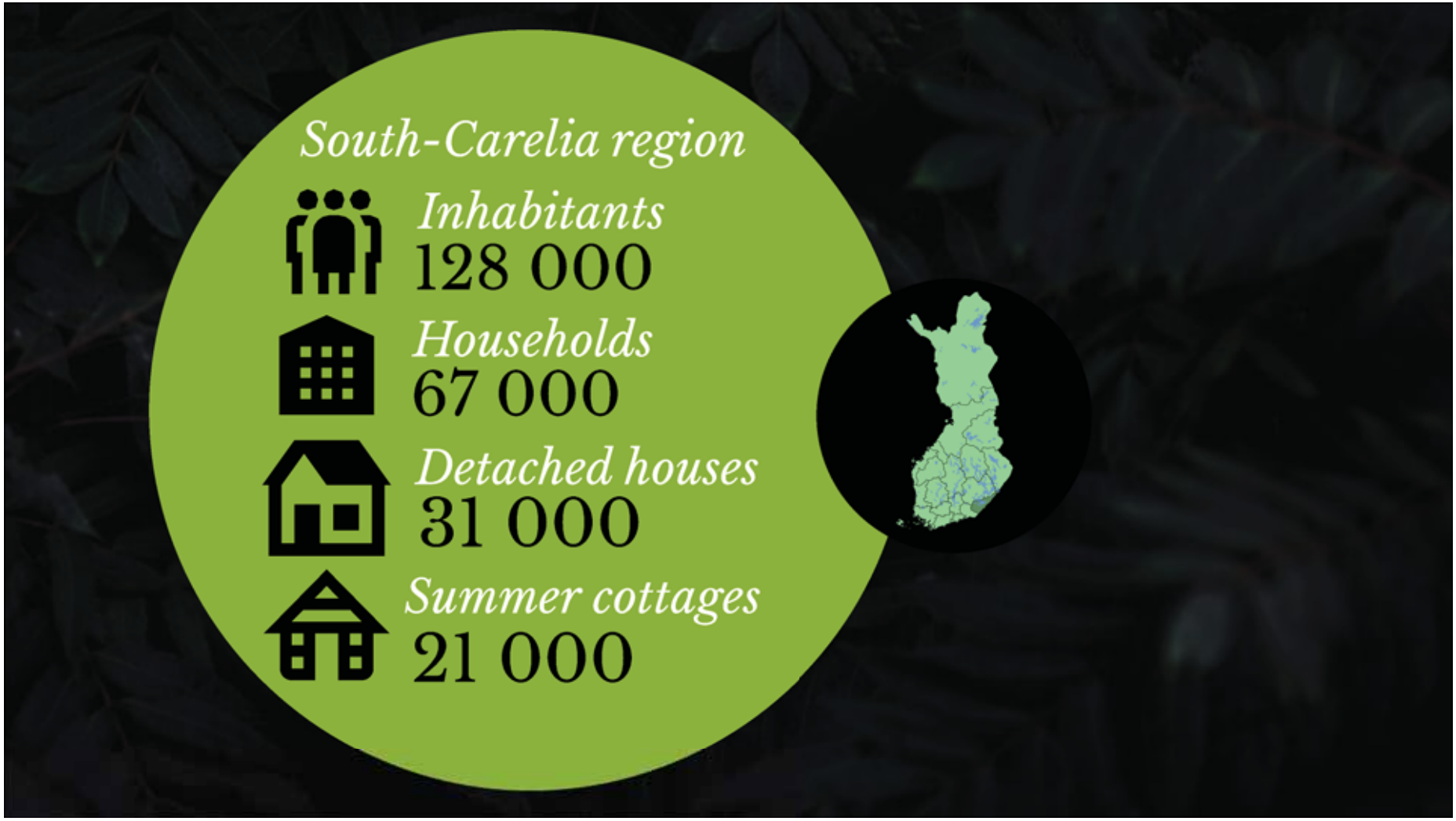
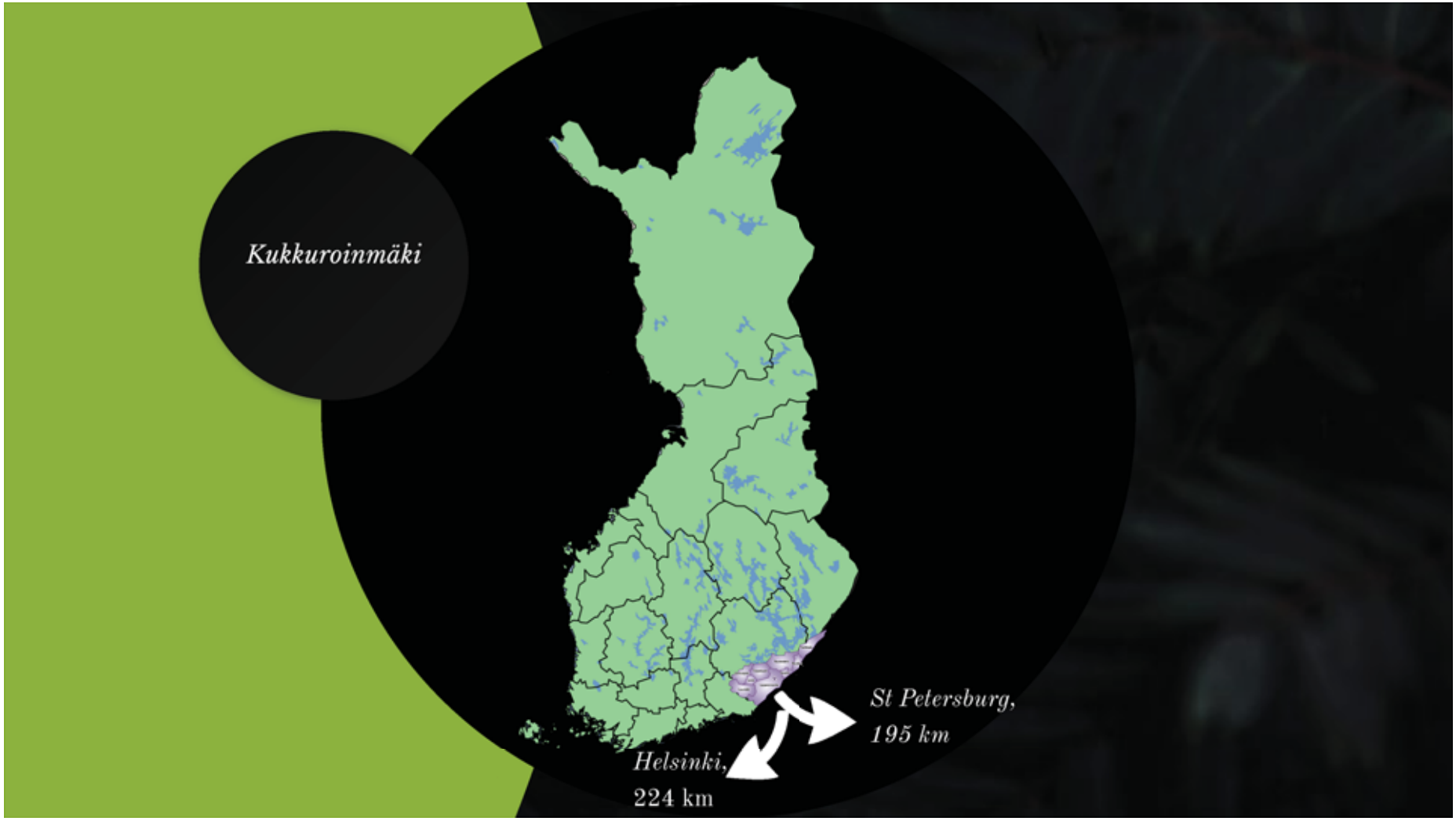

South-Carelia region
Inhabitants
128 000
Households
67 000
Detached houses
31 000
Summer cottages
21 000


Kukkuroinmäki
St Petersburg,
195 km
Helsinki,
224 km

Parikkala
Ruokolahti
Taipalsaari
Savitaipale
Imatra
Lemi
Lappeenranta
Luumäki
St Petersburg,
195 km
Helsinki,
224 km

The Kukkuroinmäki Waste Center

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The Kukkuroinmäki Biogas Plant

- Owner: Etelä-Karjalan Jätehuolto
- Constructor: Ecoprotech (Finnish company)
- Year of consturction: 2018-2021
- Capacity 19 900 tons / year
- Substrates:
  - biowaste (from households)
  - sludge from sewage treatment plants (municipal)
- Main product: transport fuel (methane processed from biogas), CNG
  - 12 300 MWh/year
- By-products: nutriet-containing liquids and dry mass (for farming and industrial processes)

Technical information:

- Based on dry digestion technology; thermophilic process (53-55 C)
- Two reactors à 1250 m3
  - Biowaste (from households) 6300 tons/year + gardening waste 1500 tons/ year (=support substances)
  - Sludge (from municipal sewage treatment plants) 13 700 tons/year
- Output:
  - Biogas 2 000 000 Nm3/ year
    - Methan 1 230 000 Nm3/year = 12 300 MWh/year
  - Nutrious-containing liquides ➡ farming and industrial processes
  - Dry mass ~9000 tons / year ➡ farming, green building etc.

Control room

Reception 1
Control room

Reception 1
Reception 2
Control room

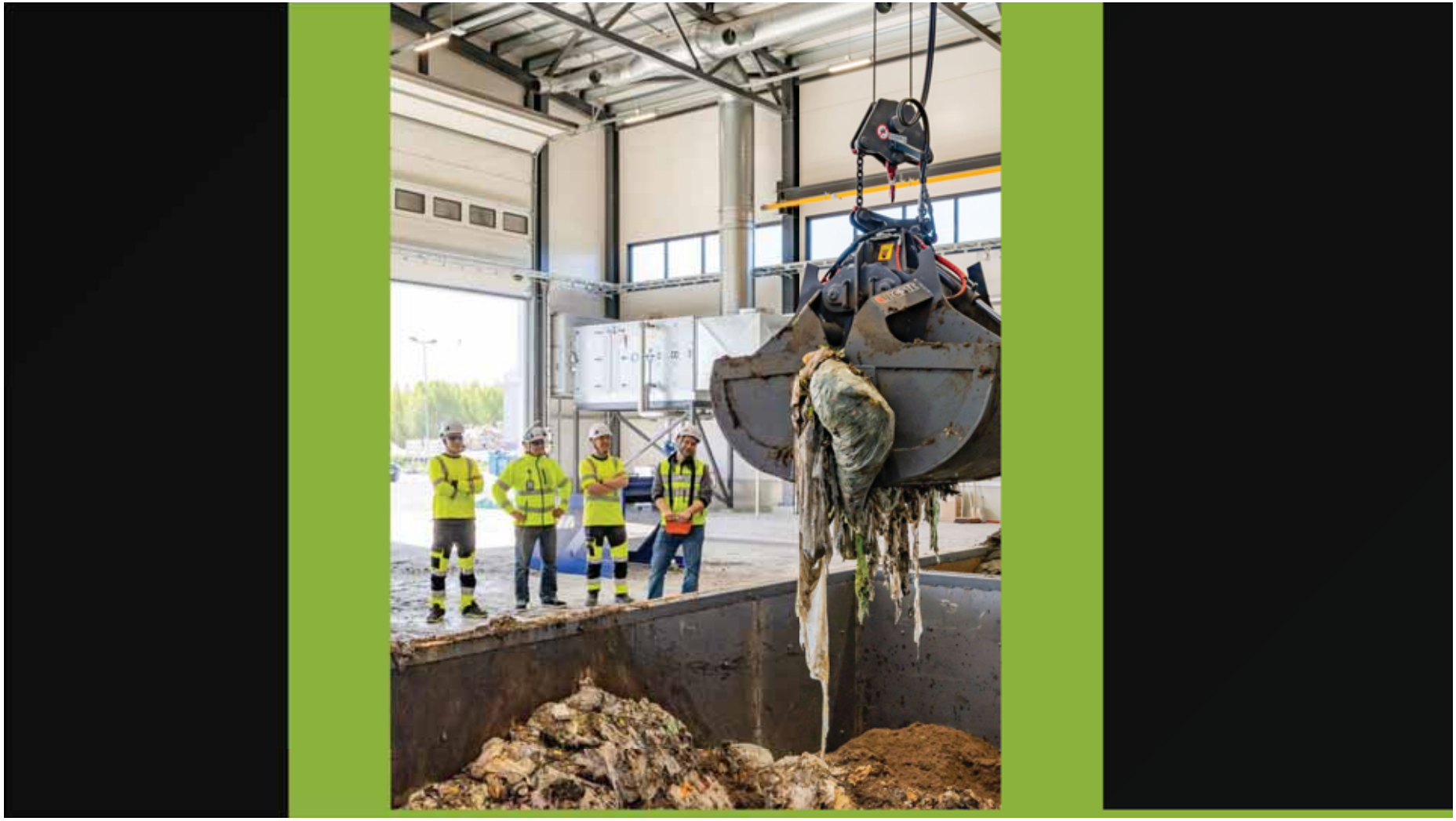
Reactor 1
Reception 1
Reception 2
Control room

Reactor 1
Reactor 2
Reception 1
Reception 2
Control room

Liquid-
separator
Reactor 1
Reactor 2
Reception 1
Reception 2
Control room

Liquid-
separator
Reactor 1
Reactor 2
Reception 1
Reception 2
Gas
storage
Control room

Liquid-
separator
Reactor 1
Reactor 2
Reception 1
Reception 2
Gas
storage
Upgrading
Control room



ORSI

POME

At the moment..

- Optimizing and learning the process
  - Some problems with too high nitrogen content of sludge
- Finishing work in distribution stations and container systems
  (after technical problems..)
- Distribution stations (3) will be opened in few weeks in Lappeenranta ja Imatra!
  - Later two more stations: in Parikkala and Luumäki (Ecoprotech)
  - For passenger cars and heavy transport (buses, trucks etc.)
    - 6-7 (bio)gas waste trucks in South-Carelia (subcontracor's)
  - BIG-biogas brand

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BIOKAASU
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Etelä-Karjalan
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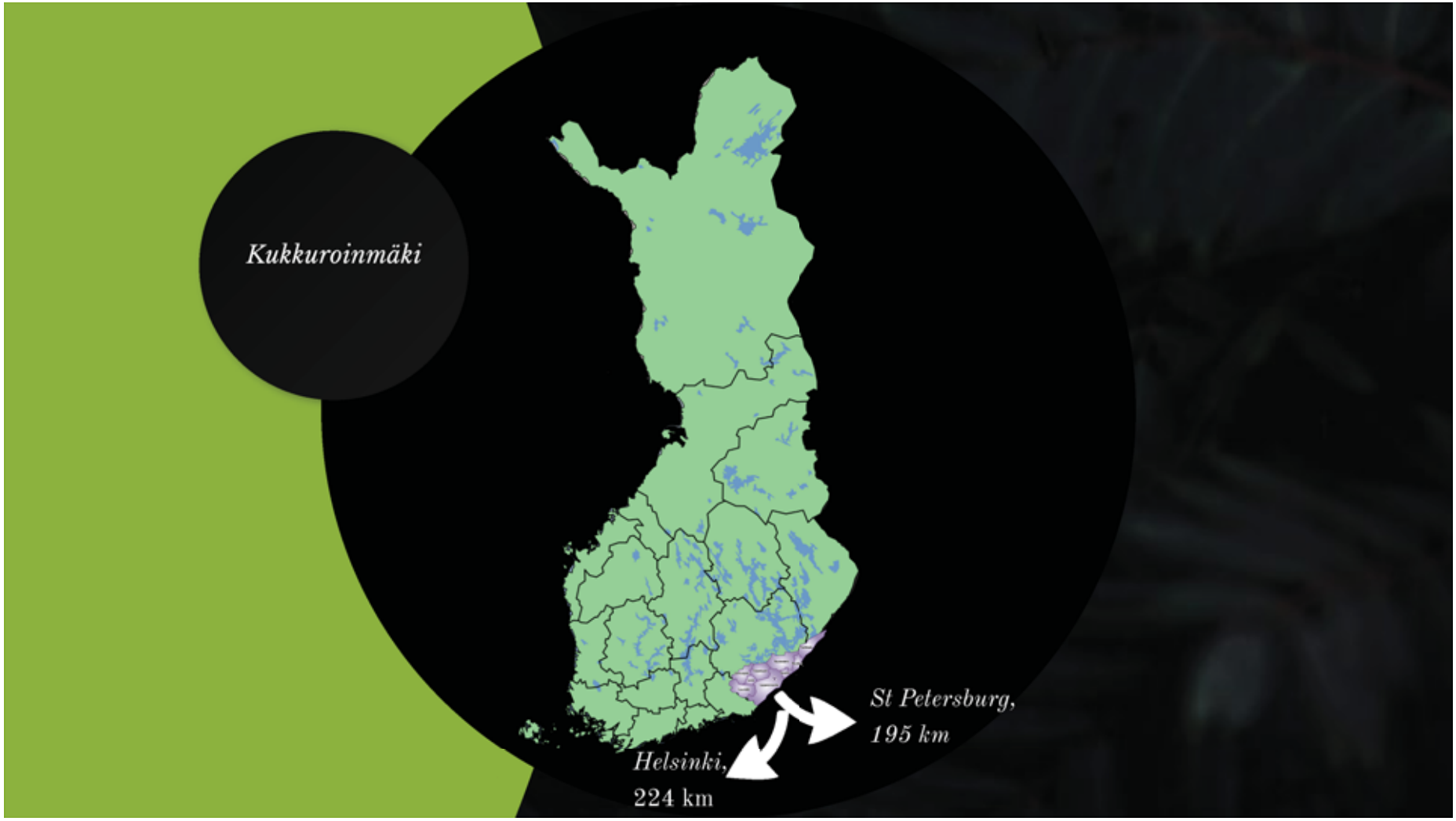
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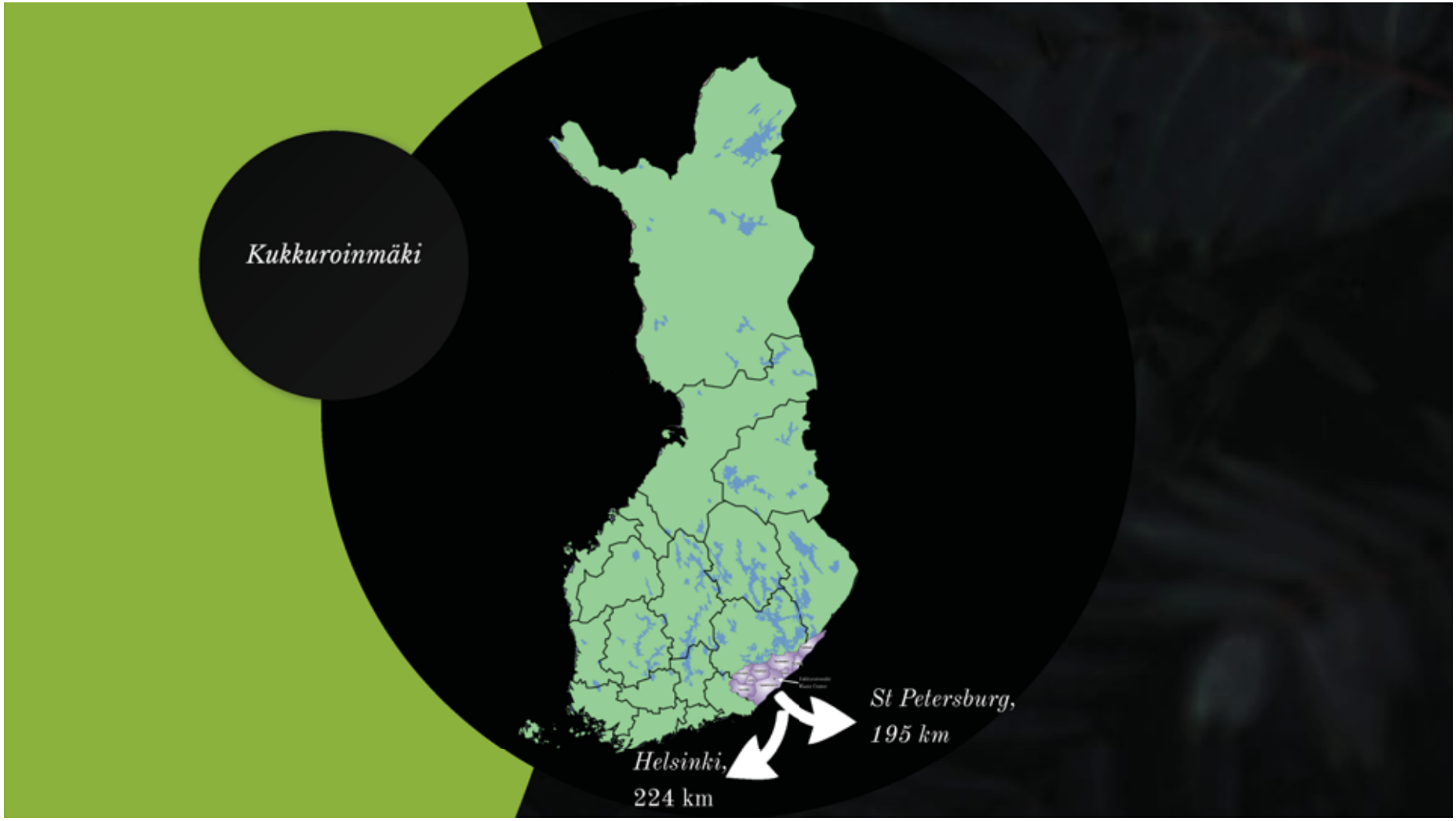
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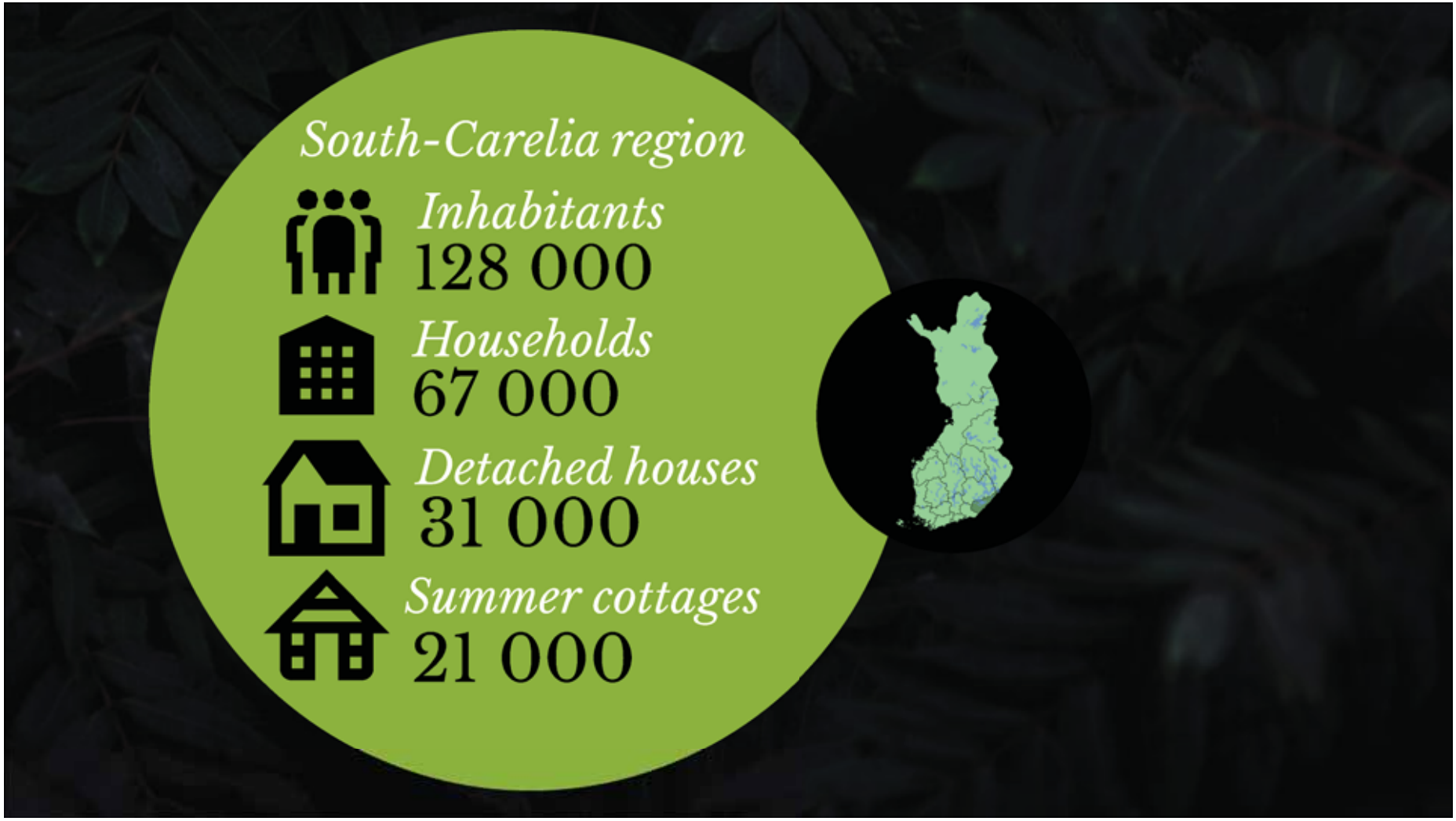
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