

# License to Heat

**A JUST TRANSITION TO POST-OIL HEATING OF DETACHED HOUSES IN FINLAND**



**Hsin-Yun Lai**

CREATIVE SUSTAINABILITY  
DESIGN



**Daniel Leiviskä**

CREATIVE SUSTAINABILITY  
DESIGN



**Anh Nguyen**

CREATIVE SUSTAINABILITY  
ENGINEERING



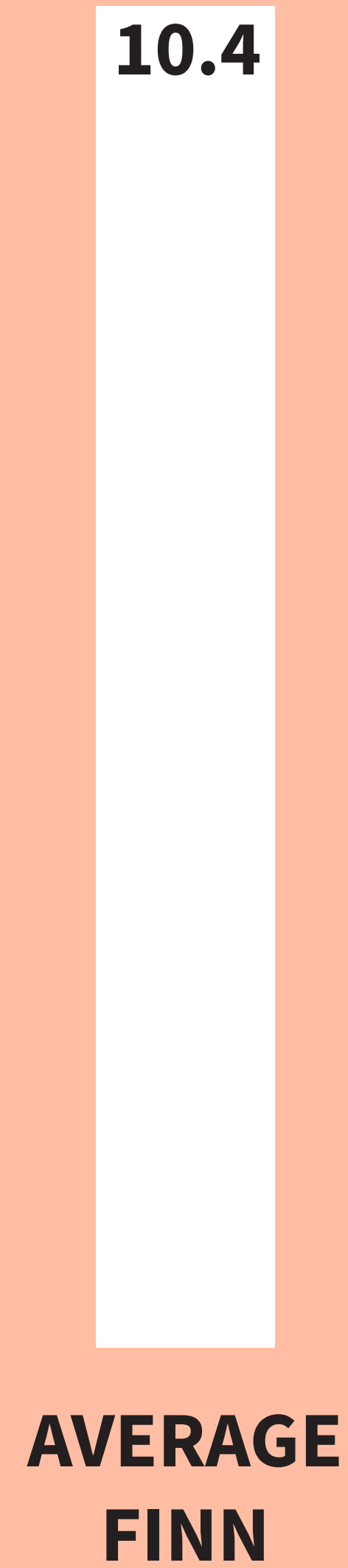
**Emile Rebours**

CREATIVE SUSTAINABILITY  
DESIGN

# WHY?

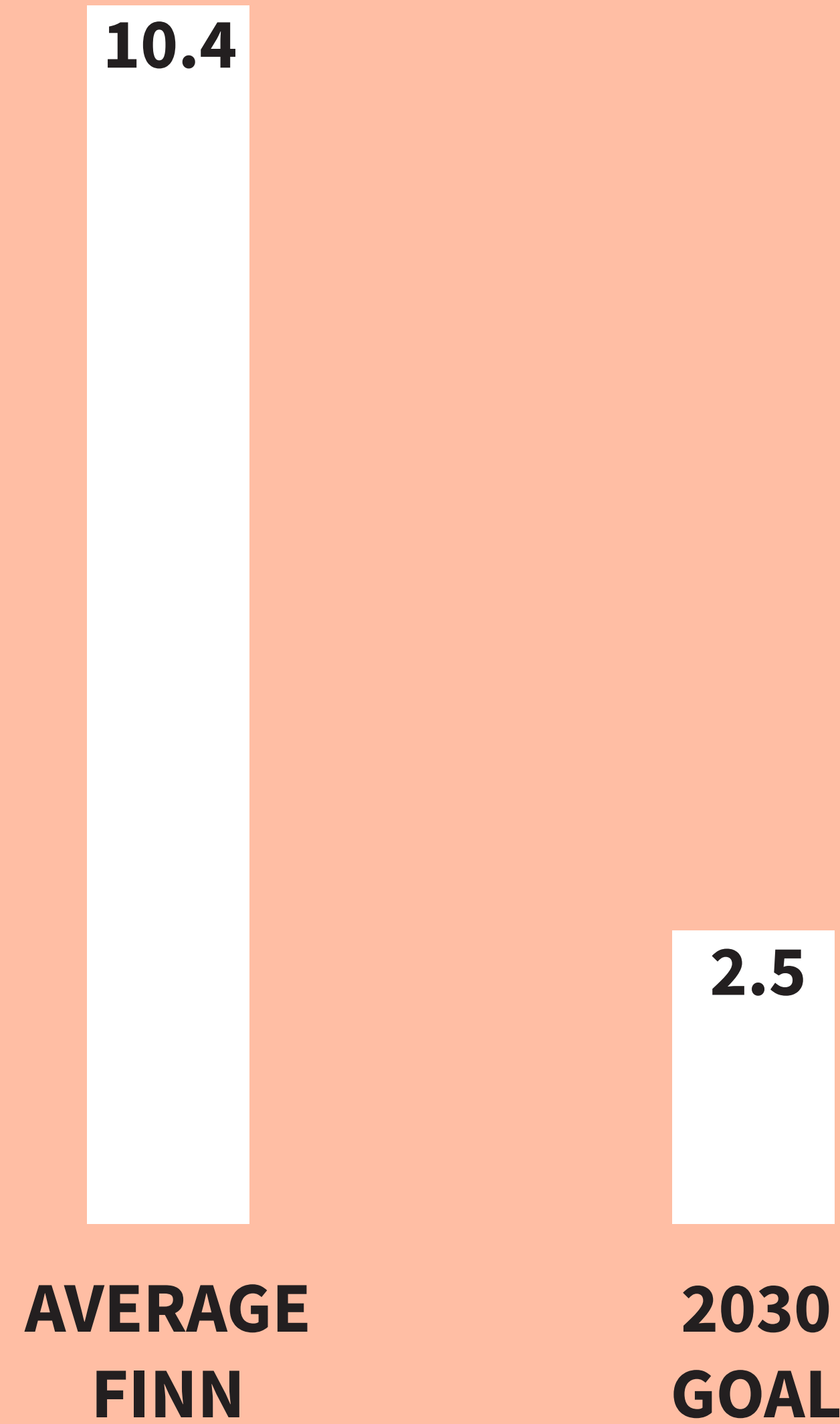
# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

SOURCE: M. LETTENMEIER ET AL. (2019)  
1.5-DEGREE LIFESTYLES.



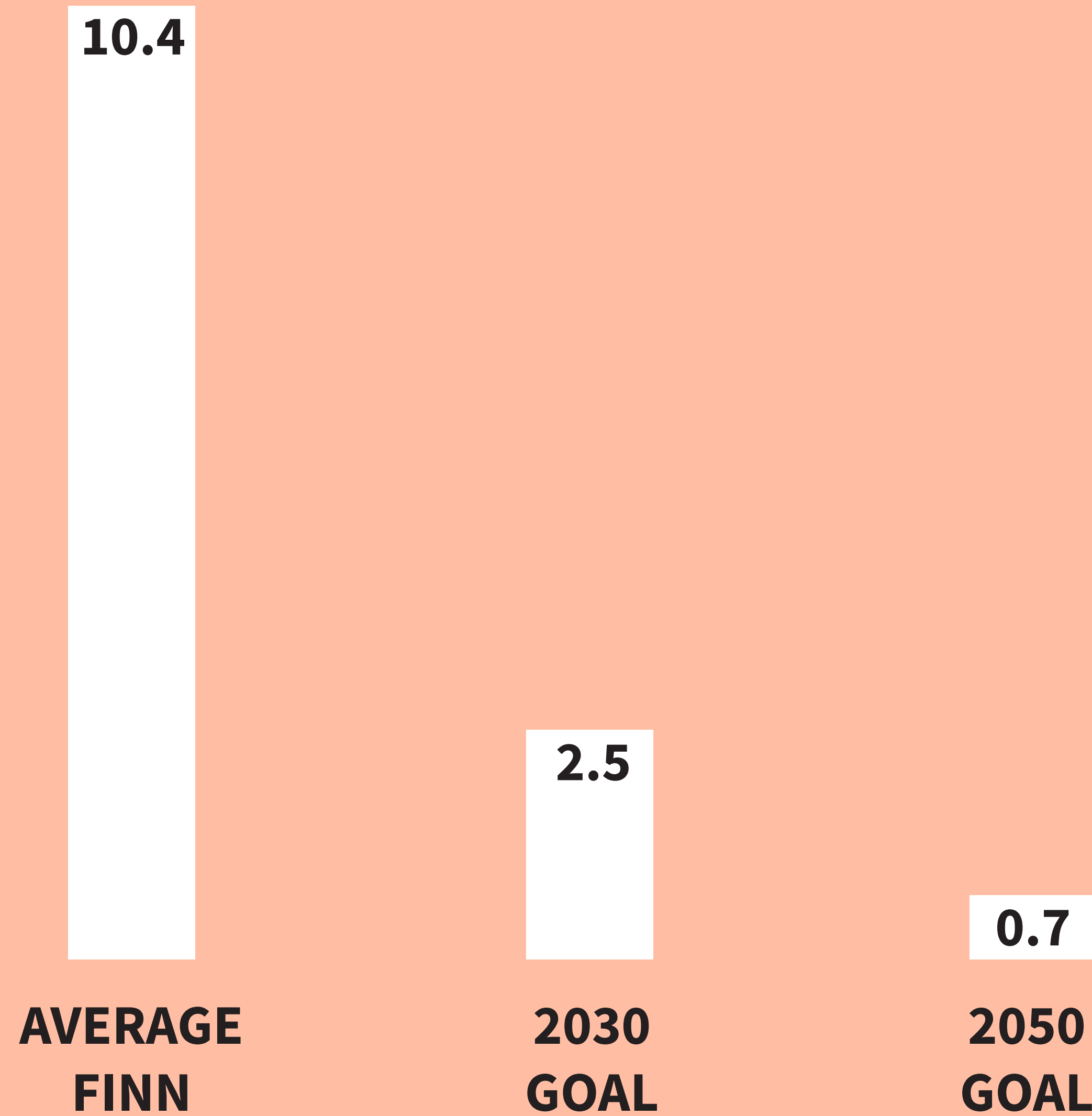
# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

SOURCE: M. LETTENMEIER ET AL. (2019)  
1.5-DEGREE LIFESTYLES.



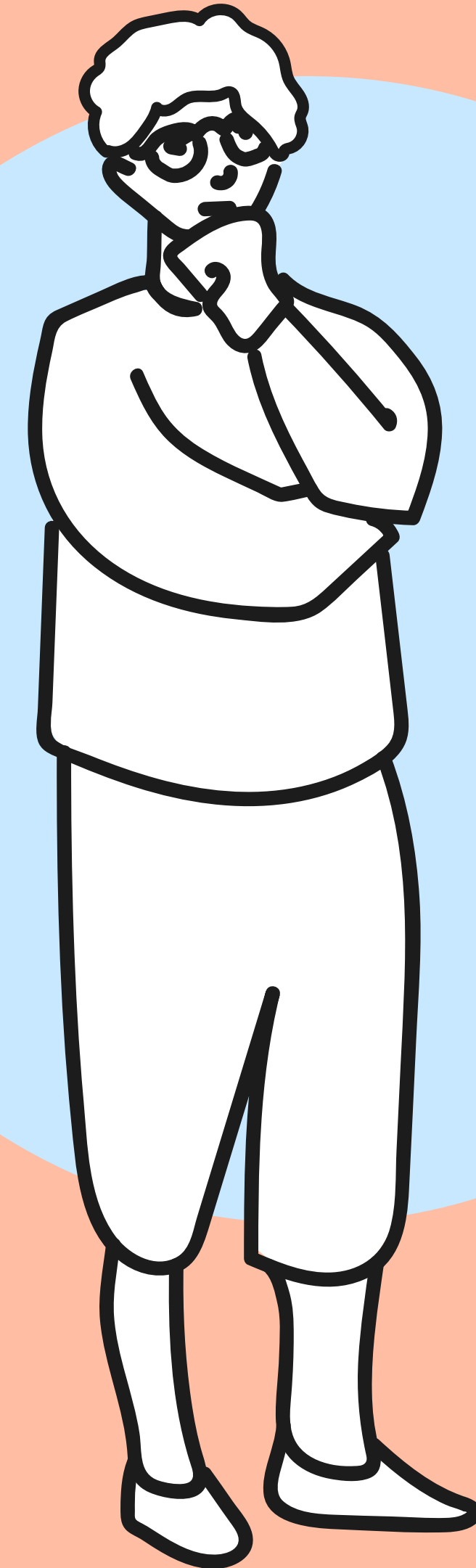
# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

SOURCE: M. LETTENMEIER ET AL. (2019)  
1.5-DEGREE LIFESTYLES.



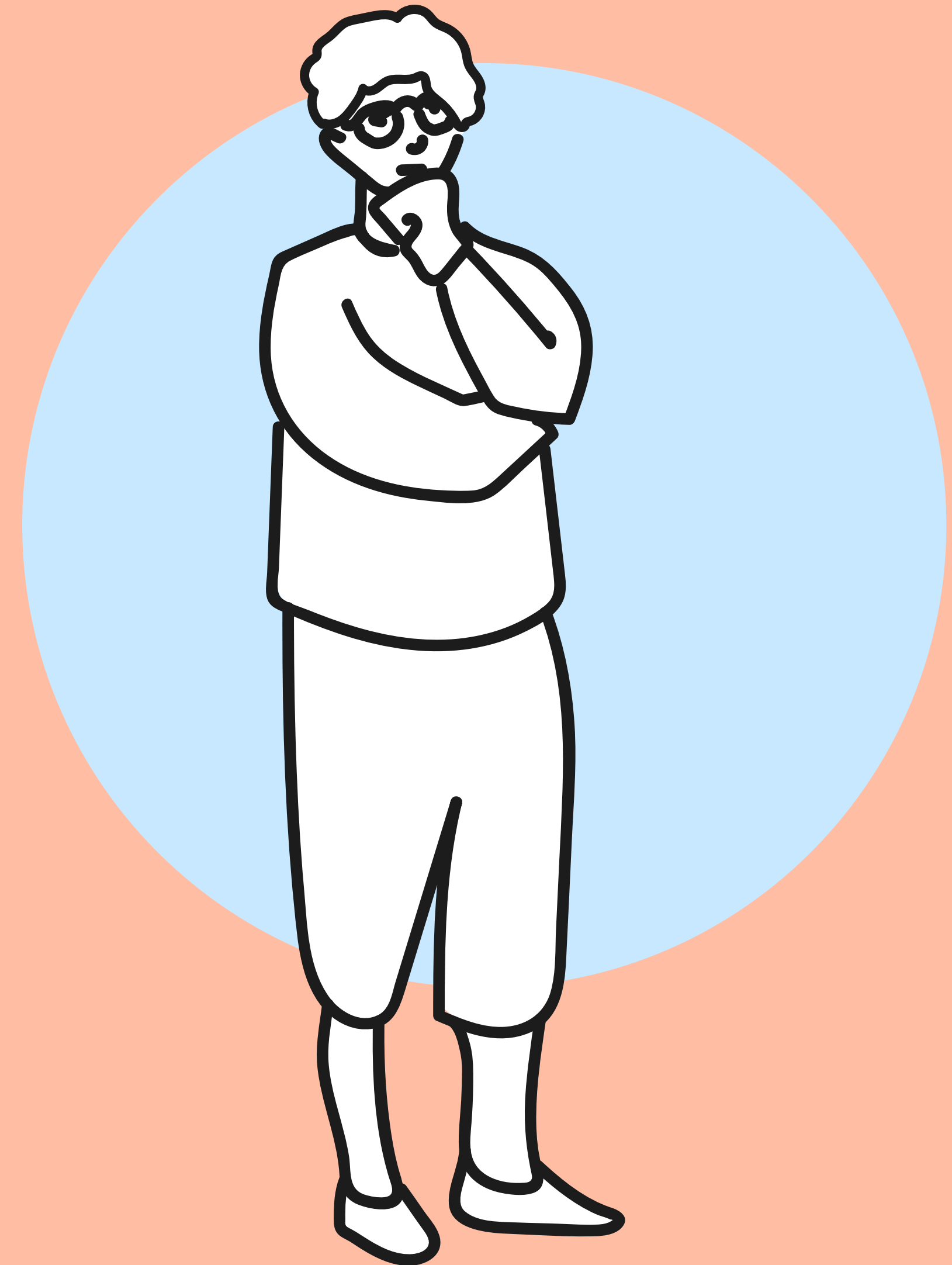
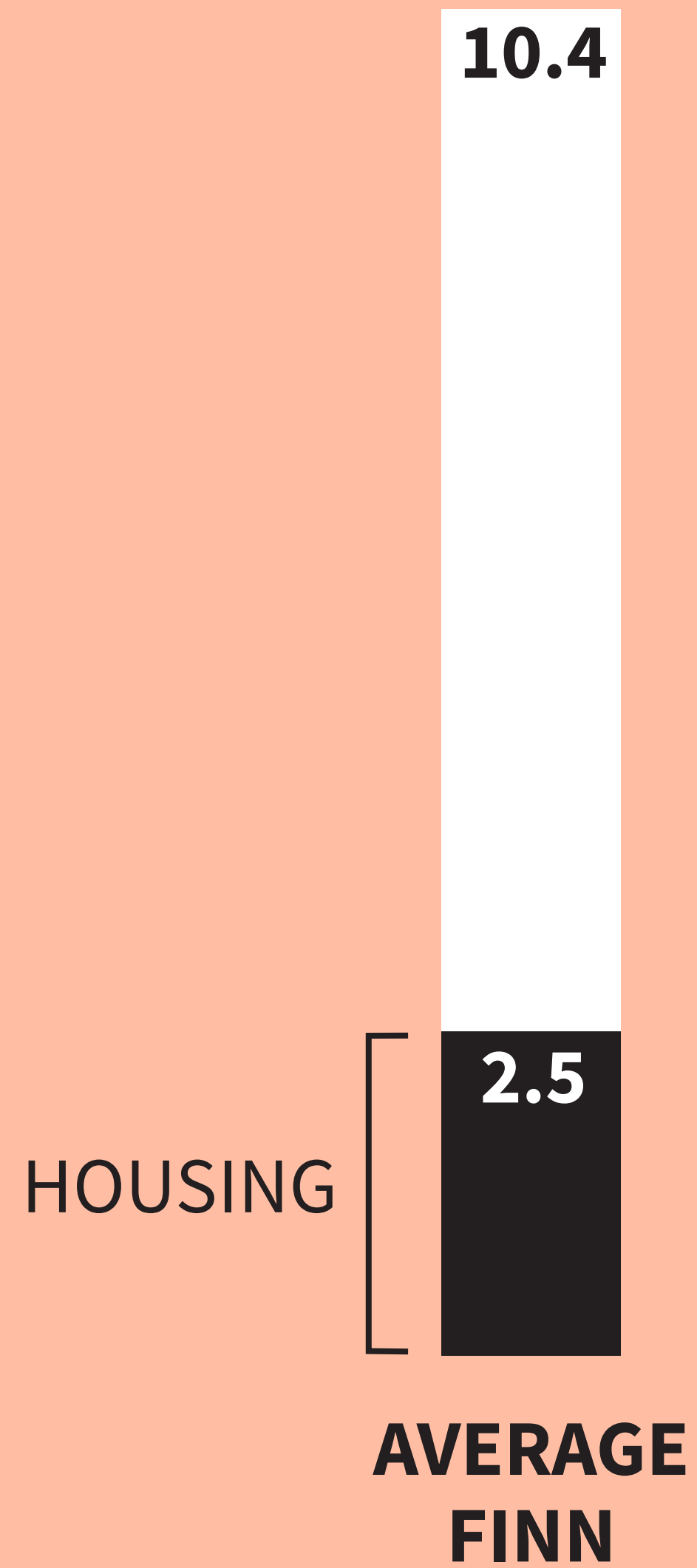
**Liisa, 68**

PENSIONER  
LIVES ALONE  
140 M<sup>2</sup>



# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

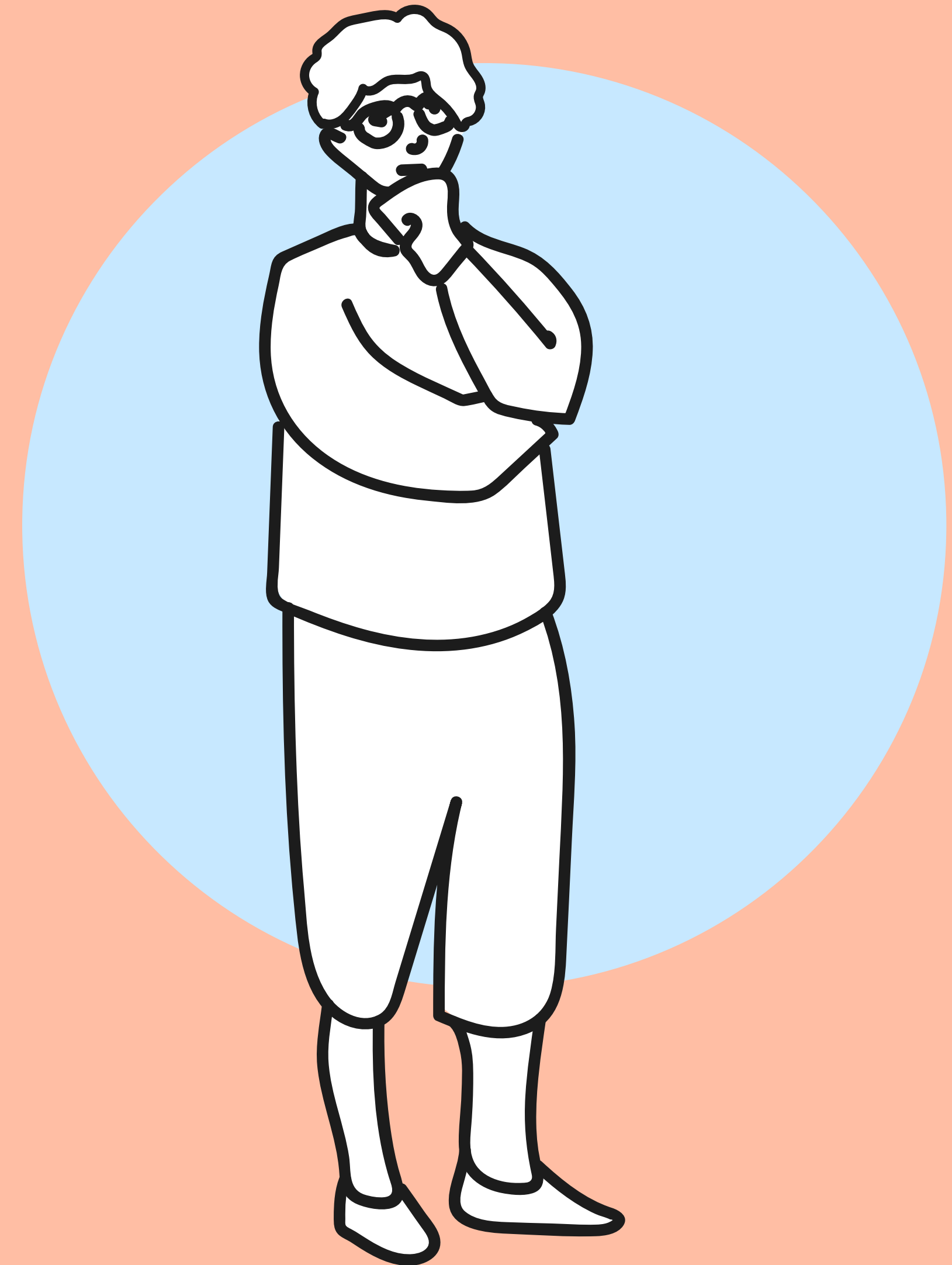
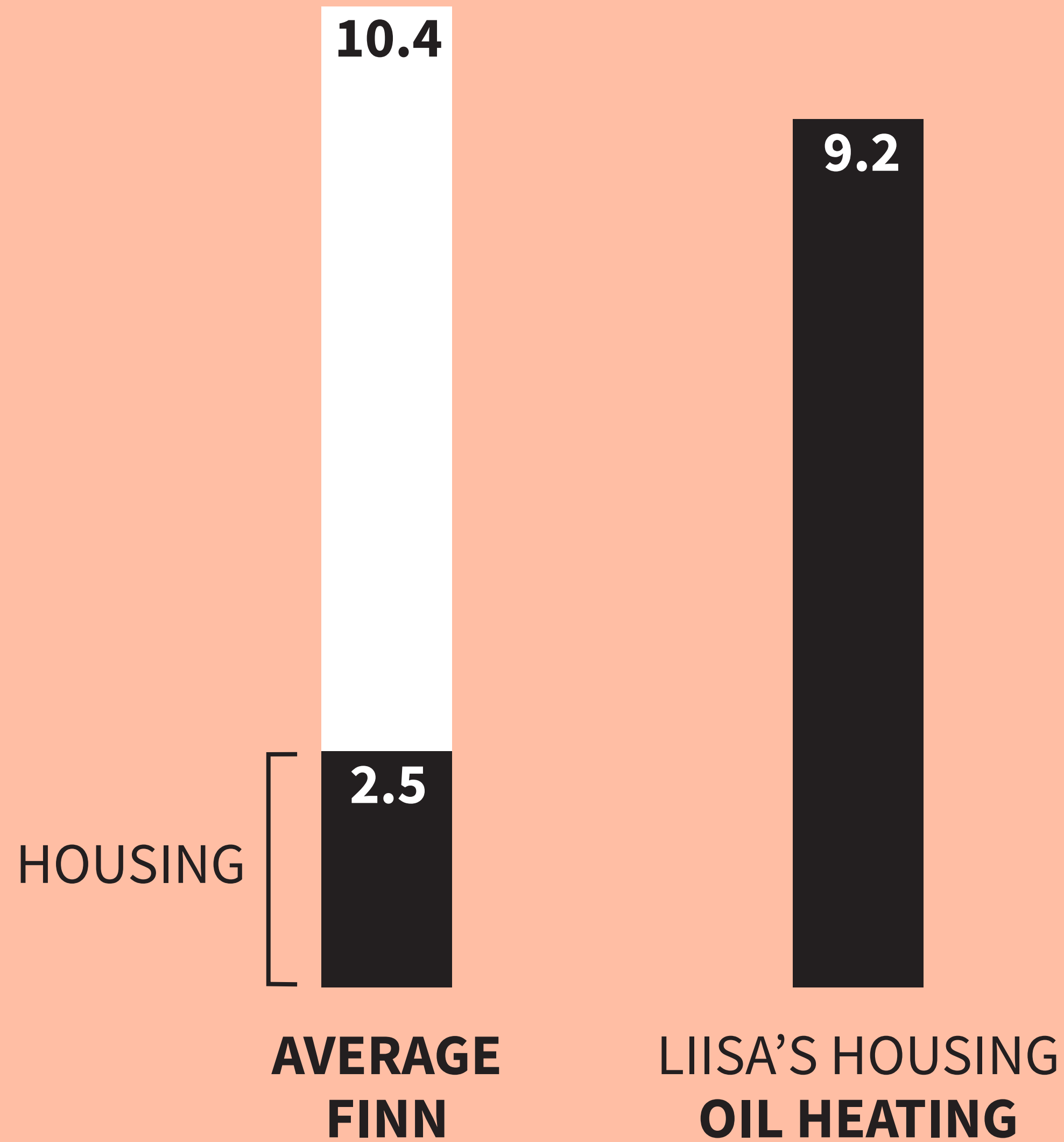
CALCULATED WITH SYKE'S CLIMATE DIET CALCULATOR





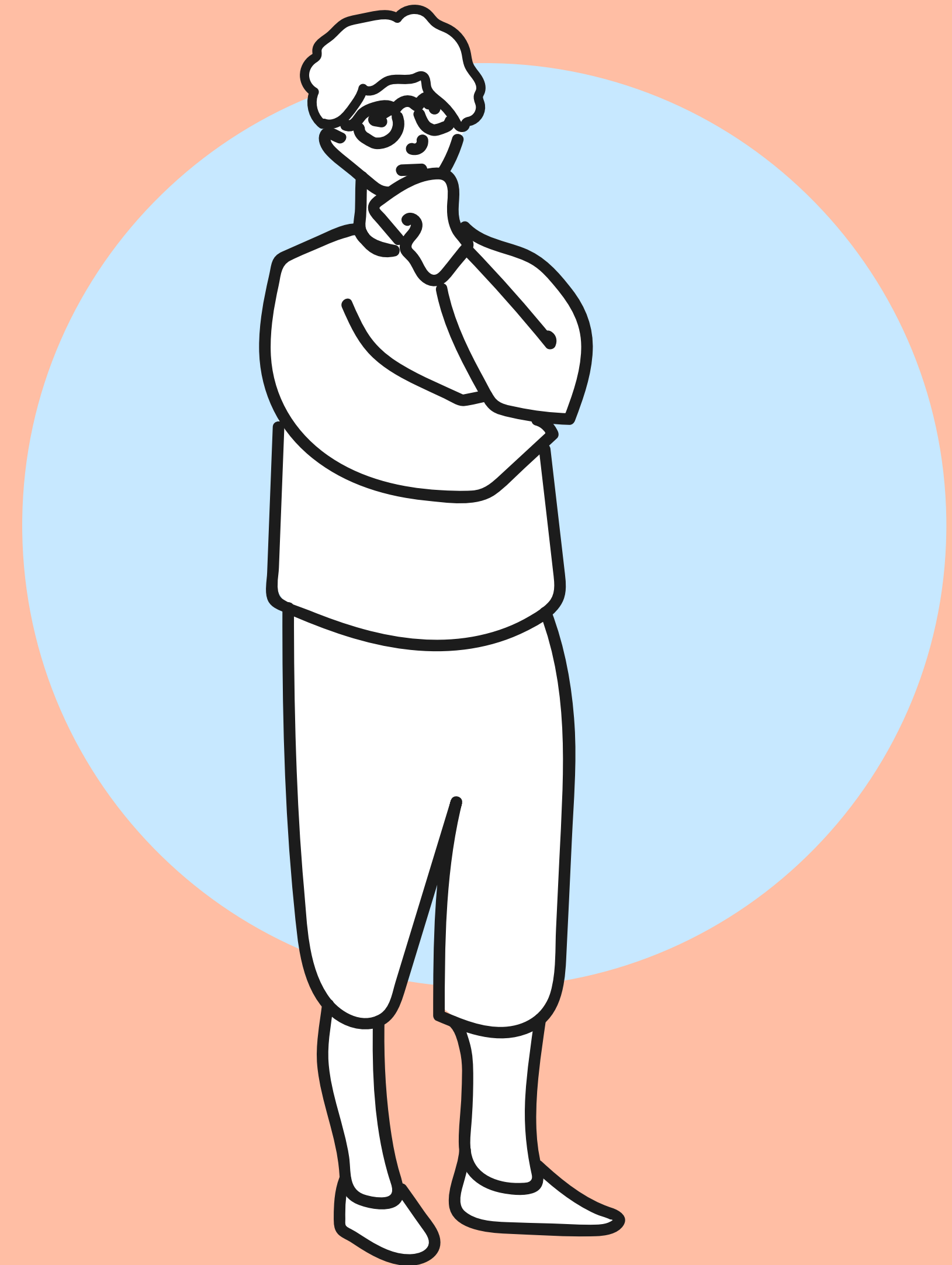
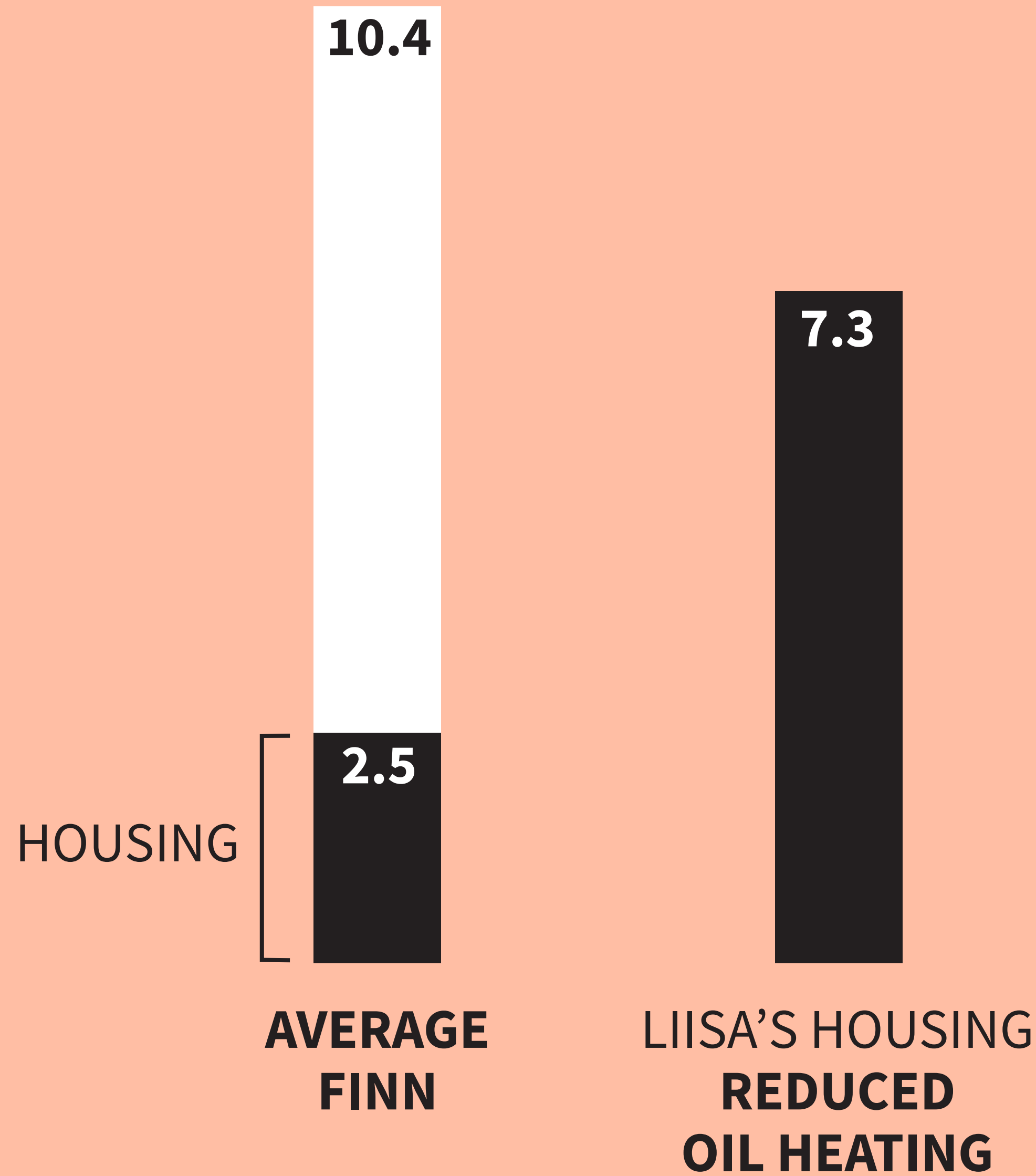
# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

CALCULATED WITH SYKE'S CLIMATE DIET CALCULATOR



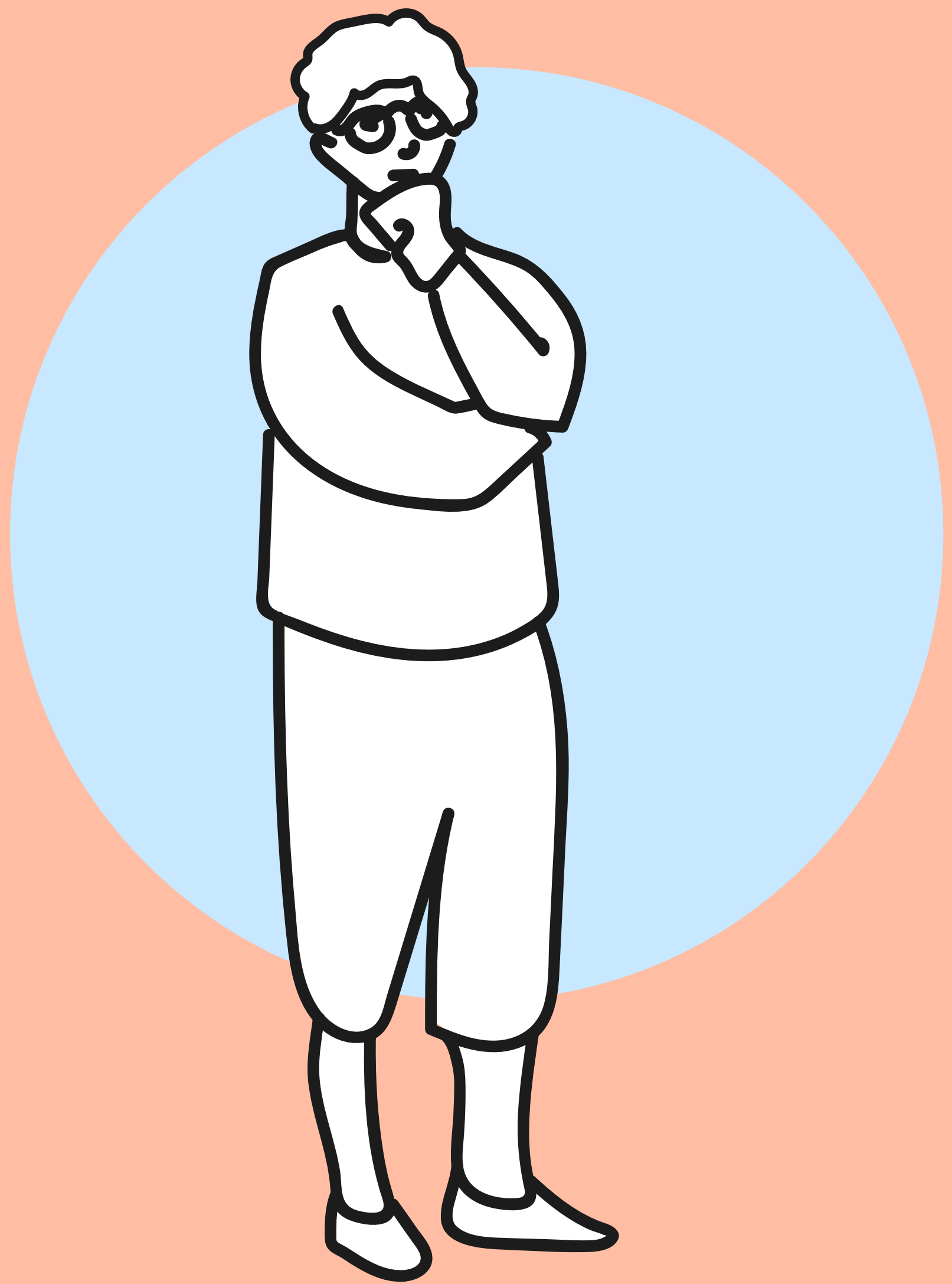
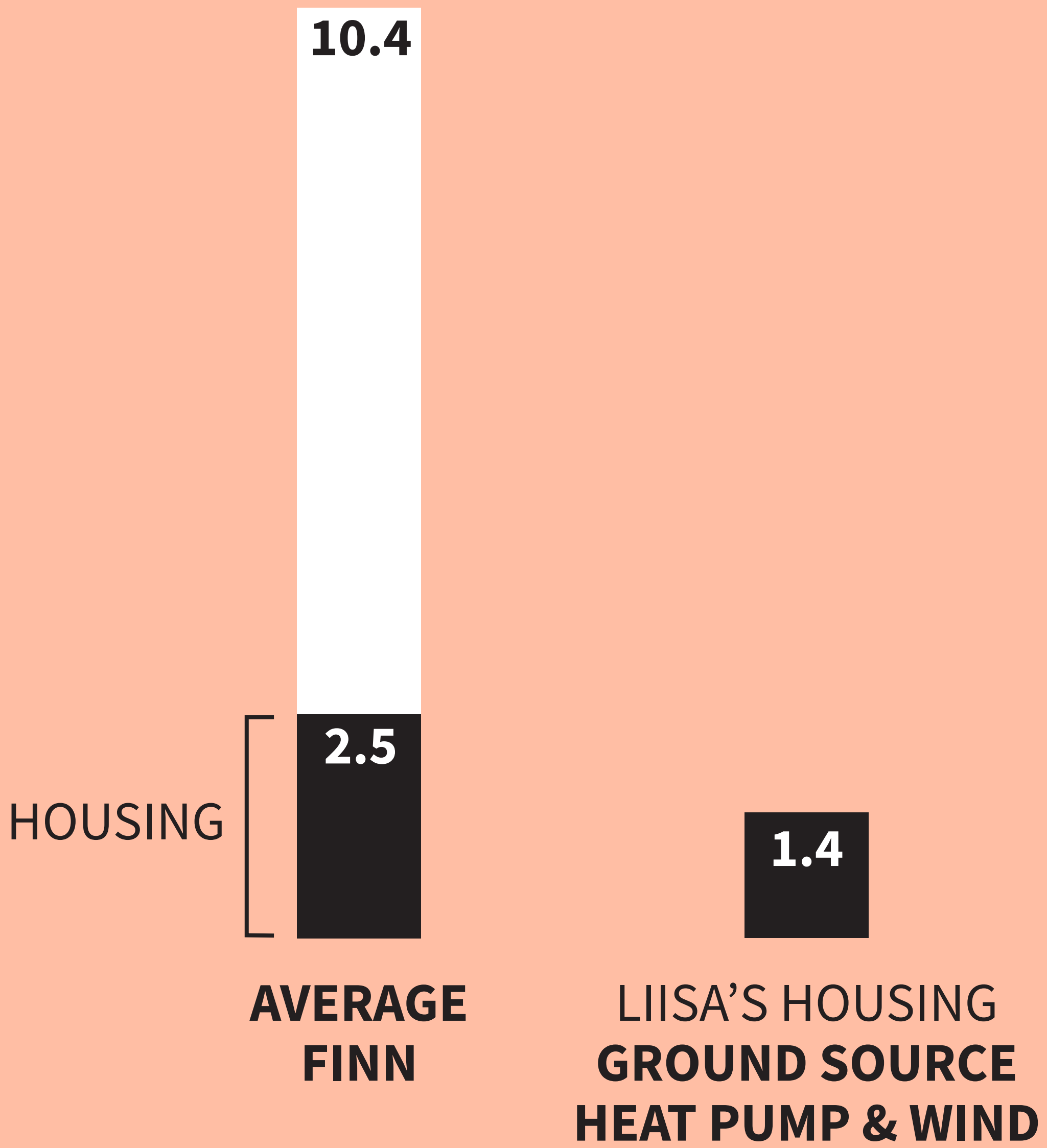
# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

CALCULATED WITH SYKE'S CLIMATE DIET CALCULATOR

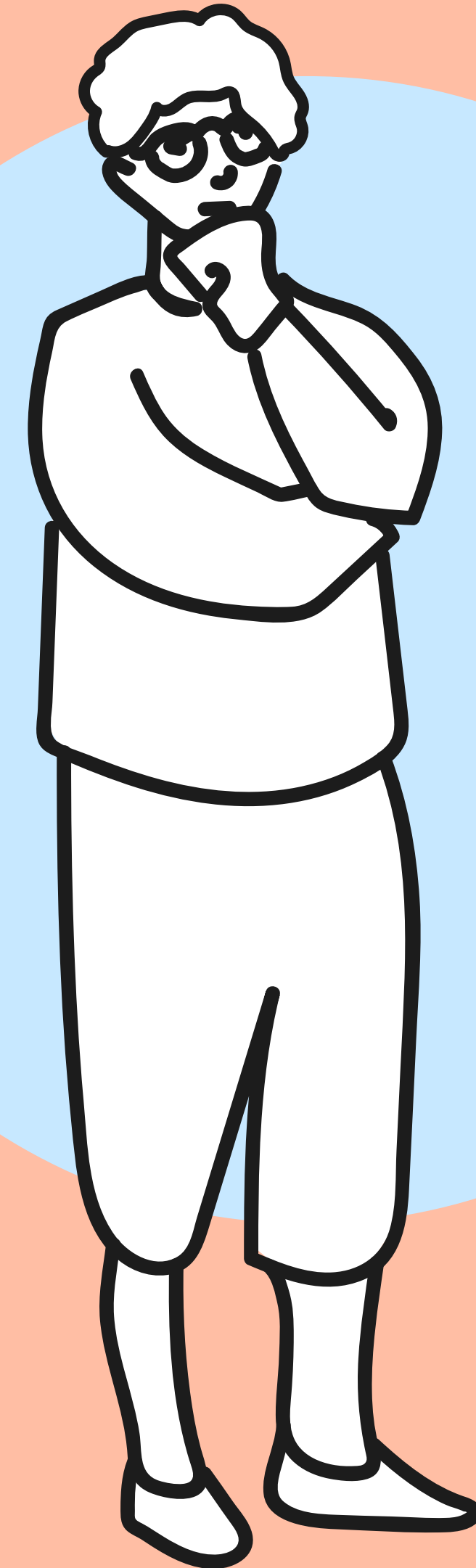


# CARBON FOOTPRINT / TONS OF CO<sup>2</sup> E / YEAR / PERSON

CALCULATED WITH SYKE'S CLIMATE DIET CALCULATOR

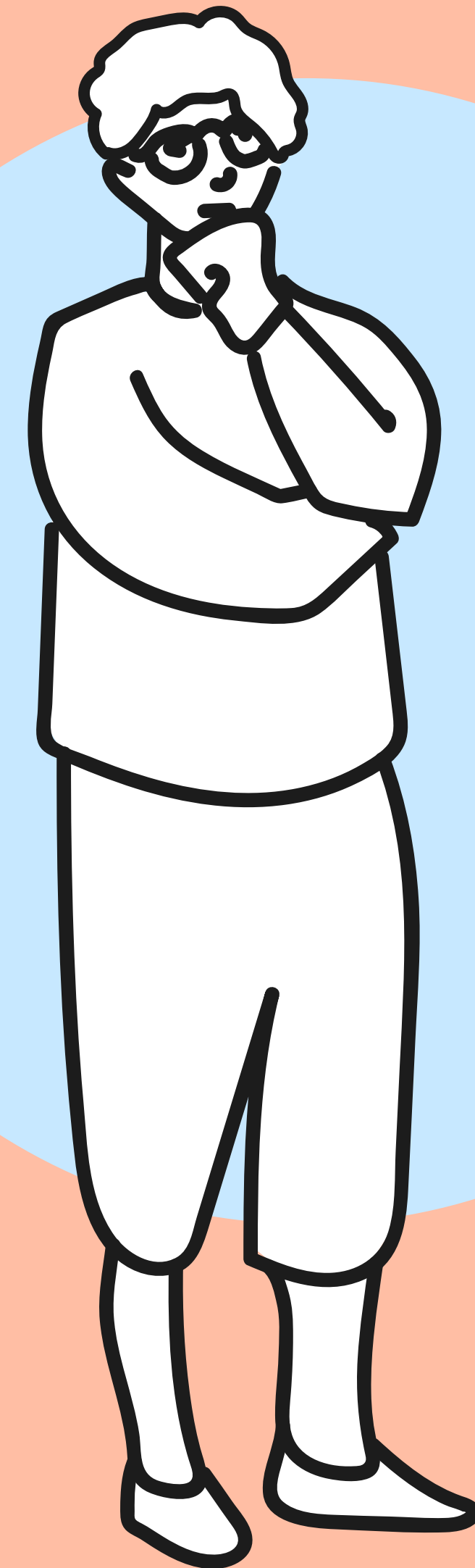


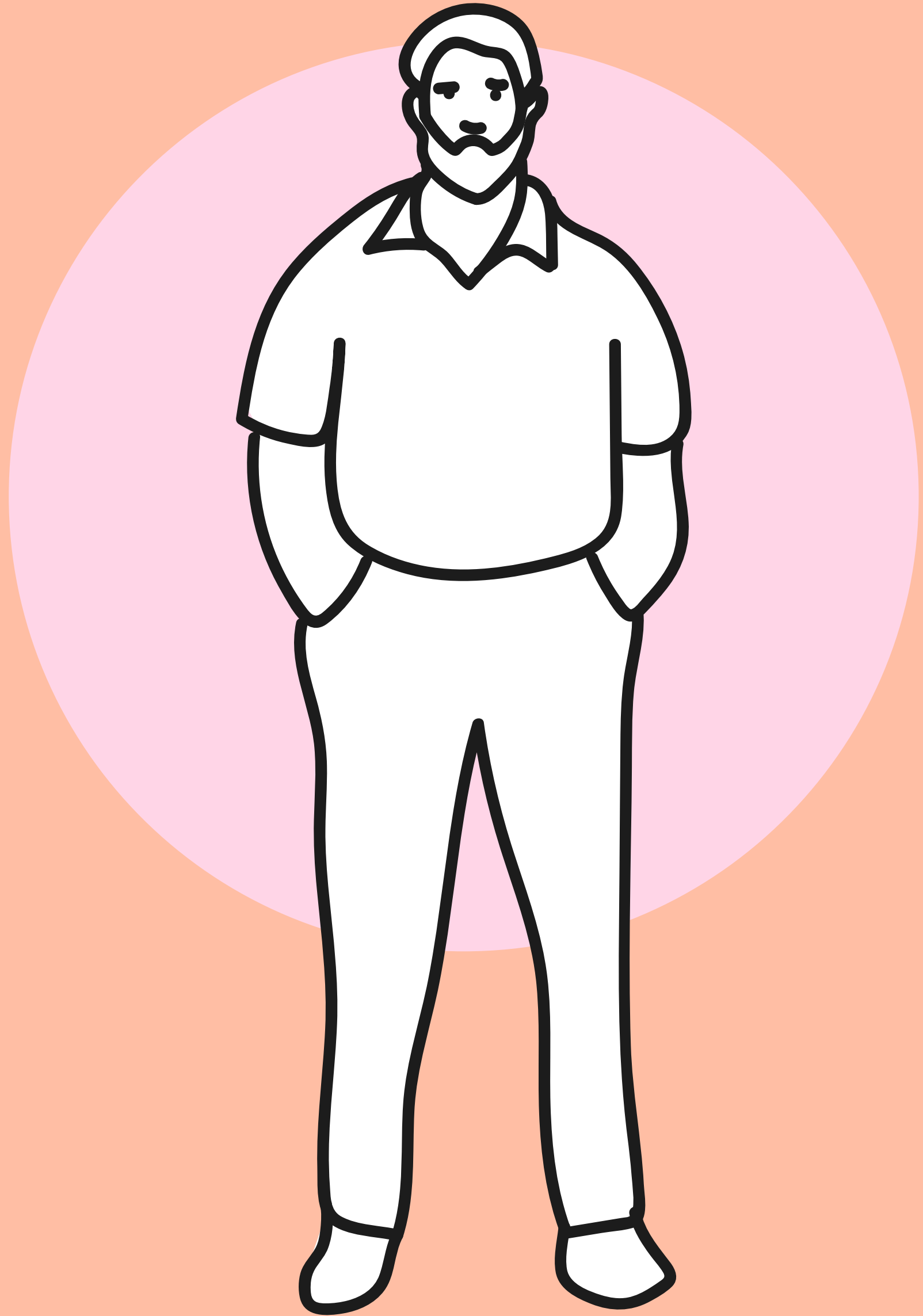
**“Sometimes support can be available but is difficult or impossible to find.”**



**“Sometimes support can be available but is difficult or impossible to find.”**

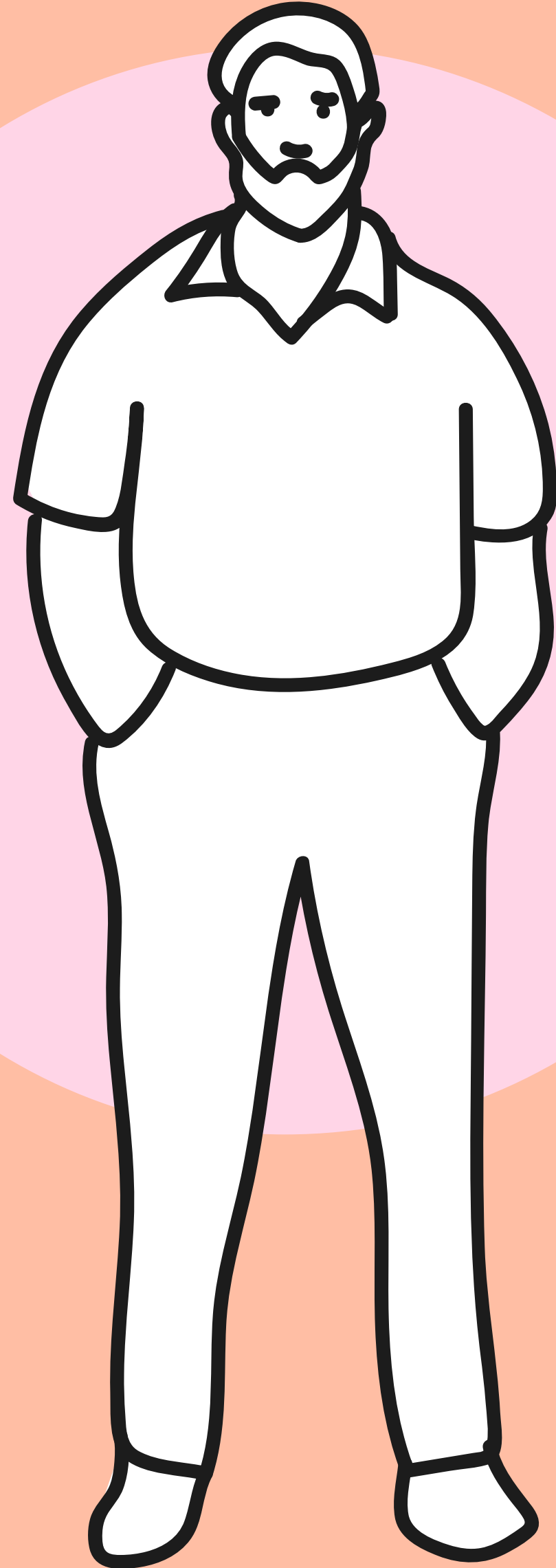
**“They almost tried to force me to buy a new heat pump, I felt quite annoyed.”**





**Make, 44**

UNEMPLOYED  
SINGLE PARENT, 2 CHILDREN  
110 M<sup>2</sup>

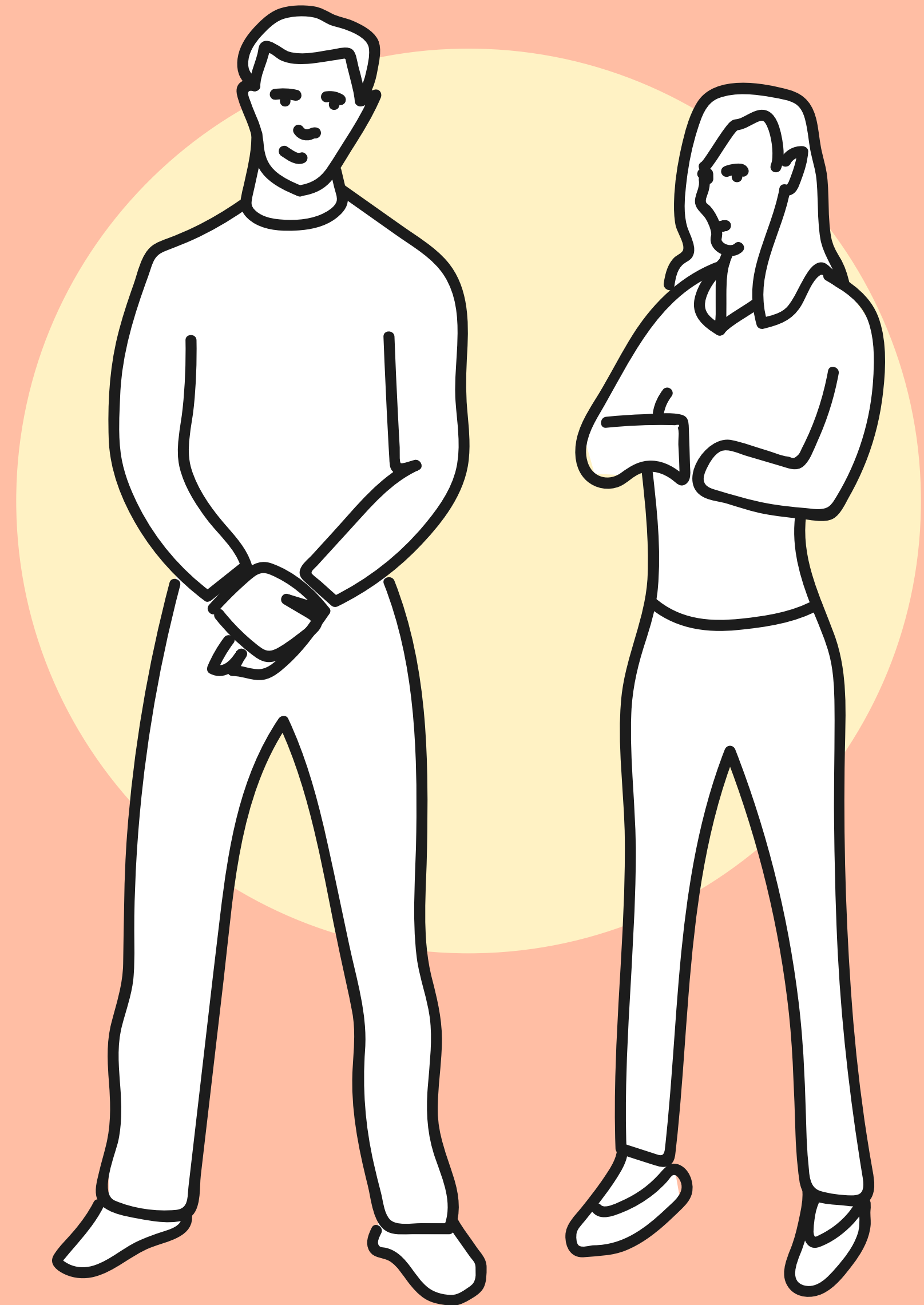


**“The whole goal is just about bullying and controlling the common people.**

**Increasing taxes will clean the air, yeah right.”**

# Panu, 34 & Jenna, 35

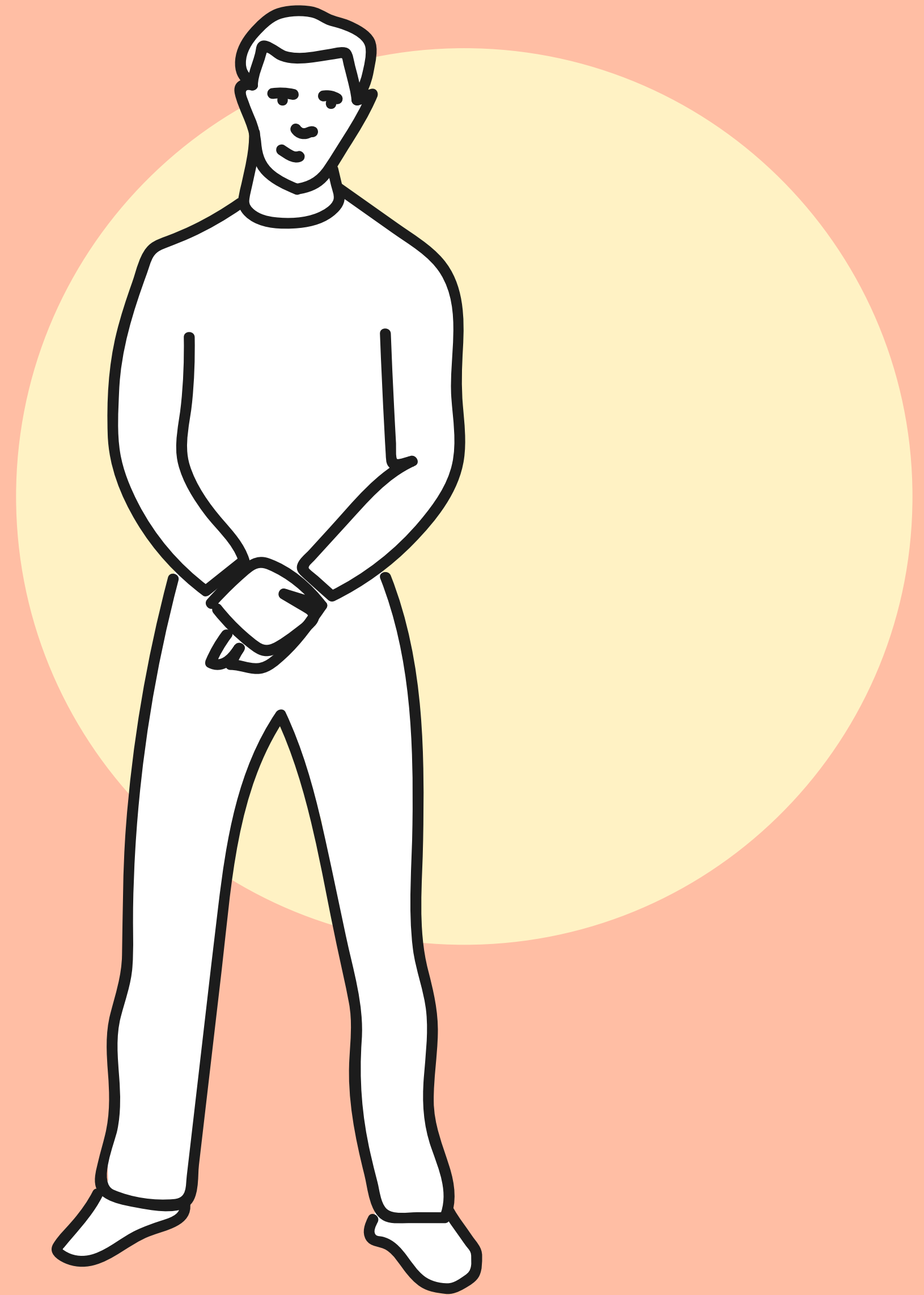
TRUCKER & PRESCHOOL TEACHER  
2 CHILDREN  
220 M<sup>2</sup>



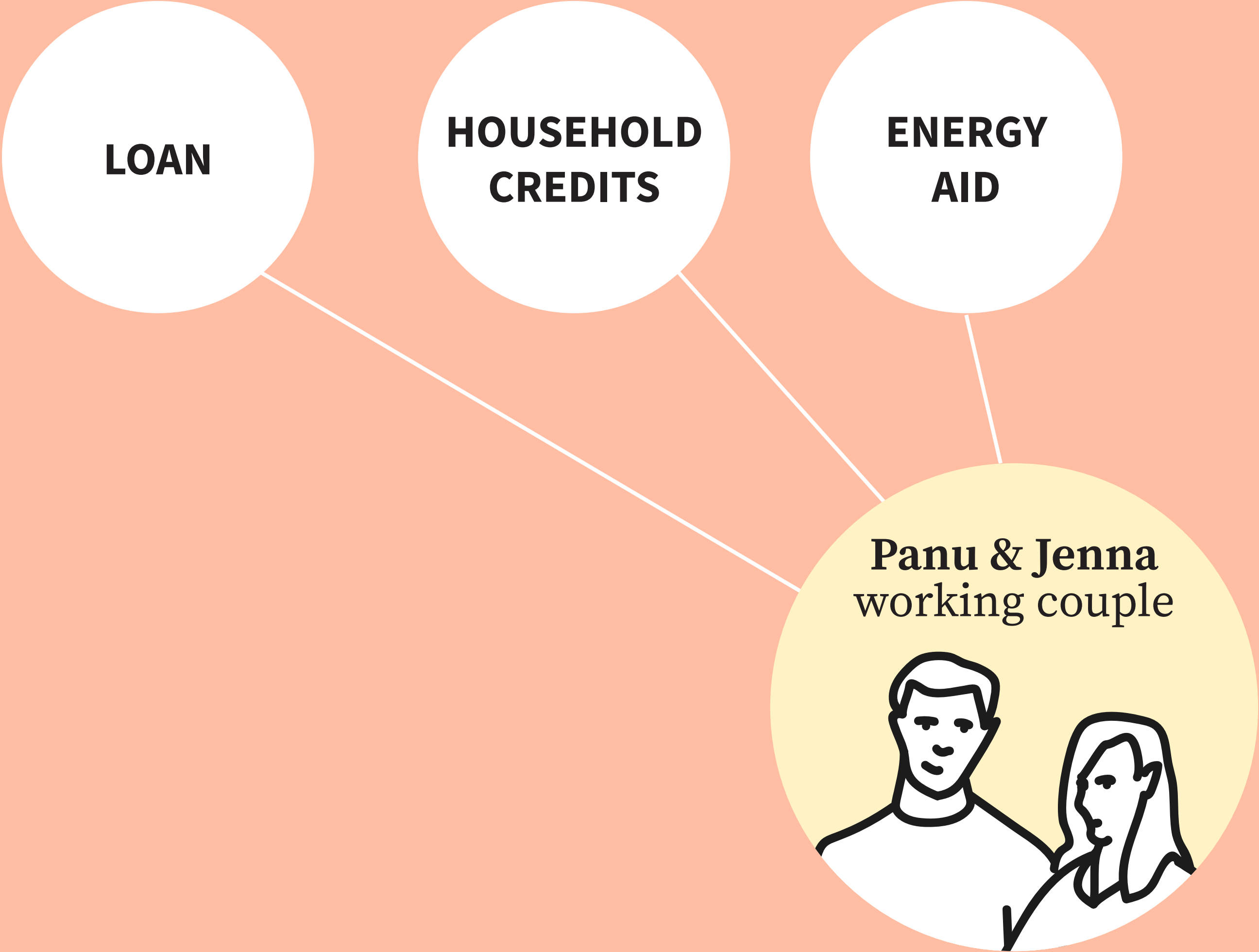


**“I think the carbon neutrality goal for individuals is close to bullying.**

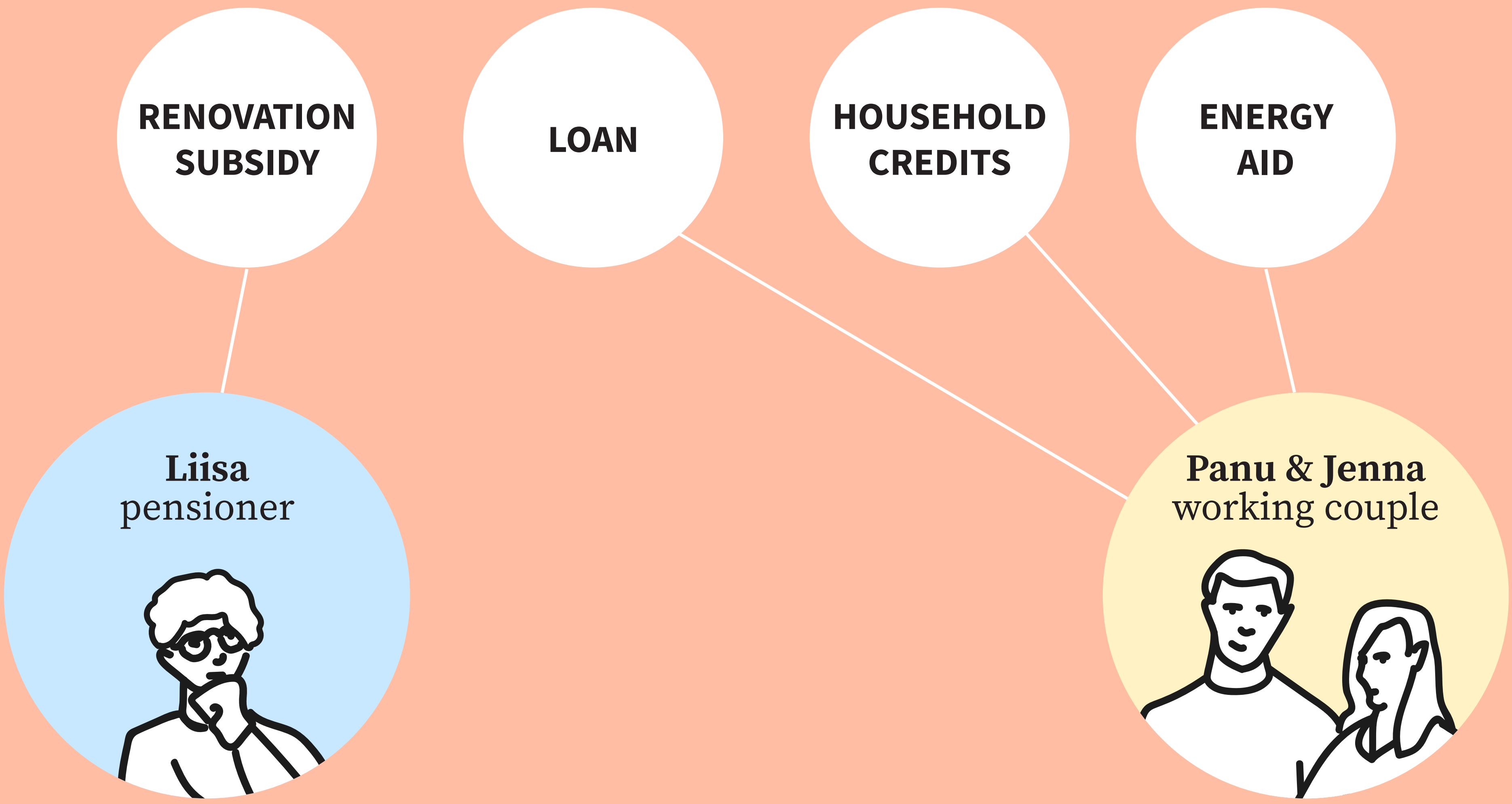
**The thing that has an effect on anything is the industry.”**



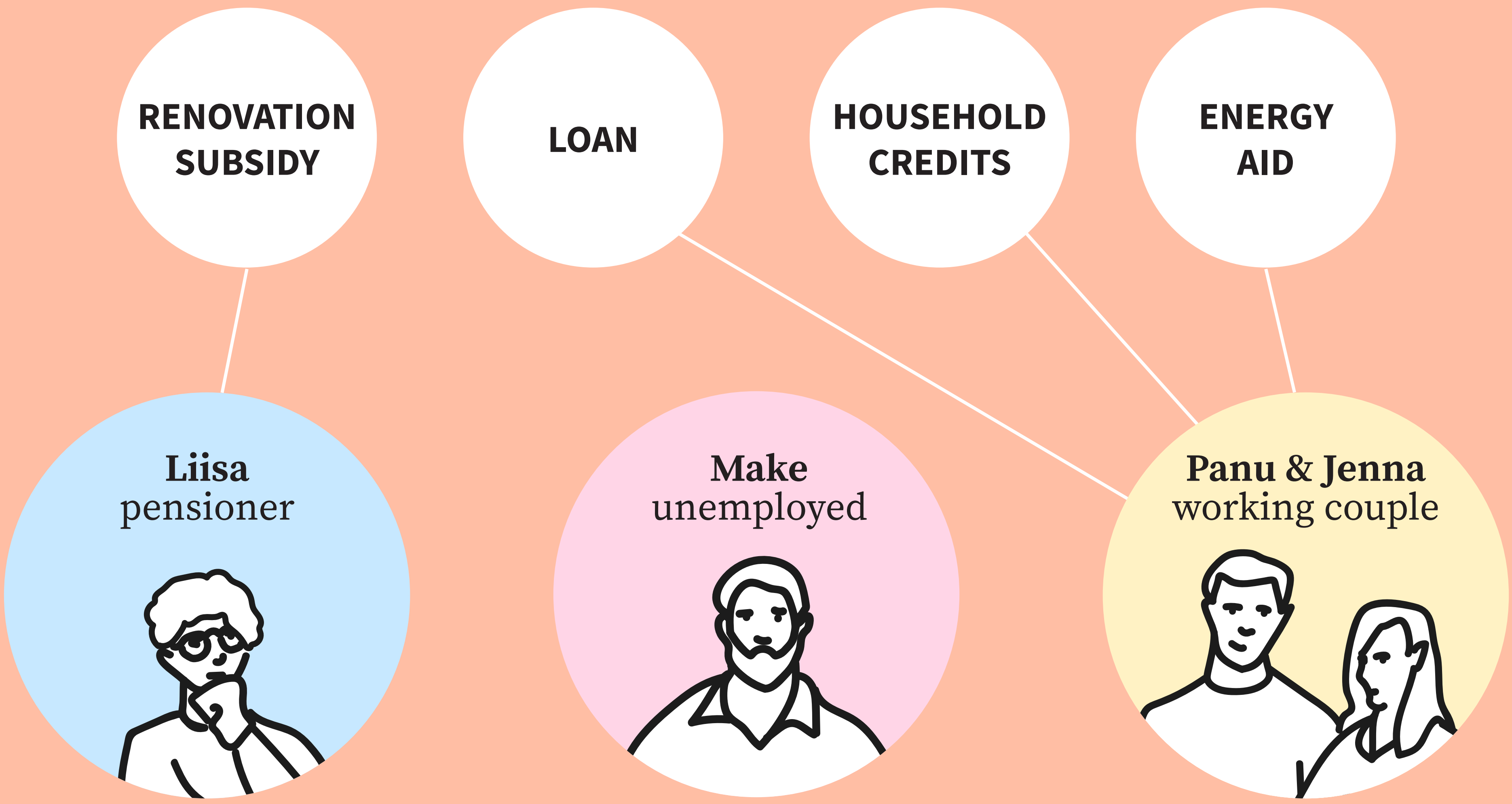
# Residents have different financial options



# Residents have different financial options



# Residents have different financial options



Continuing to heat with oil is  
**the passive default**

**“I have oil heating  
because that is  
what was installed  
in the house when  
I moved in.”**

Make  
unemployed



Continuing to heat with oil is  
**the passive default**

**“I have oil heating  
because that is  
what was installed  
in the house when  
I moved in.”**



# The default



**CONTINUE  
HEATING  
WITH OIL**

Continuing to heat with oil is **the passive default**

# The default



- STATUS QUO BIAS
- SUNK COST EFFECT
- TEMPORAL DISCOUNTING
- PERCEIVED TRUST

**CONTINUE  
HEATING  
WITH OIL**

SOURCE: E. R. FREDERIKS ET AL. (2015)  
HOUSEHOLD ENERGY USE: APPLYING BEHAVIOURAL ECONOMICS  
TO UNDERSTAND CONSUMER DECISION-MAKING AND BEHAVIOUR.

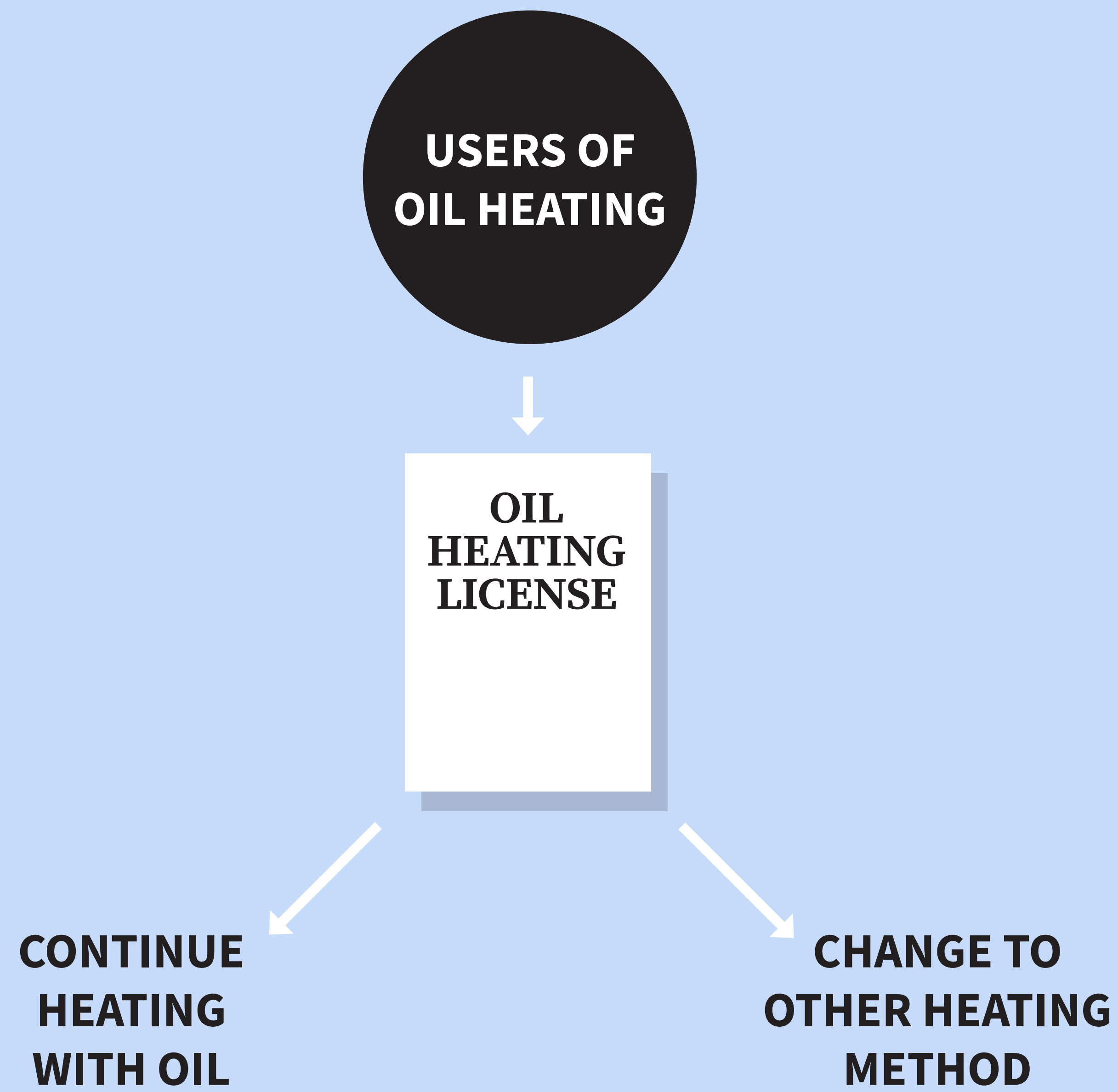
**How to disrupt the default  
in a way that is fair?**



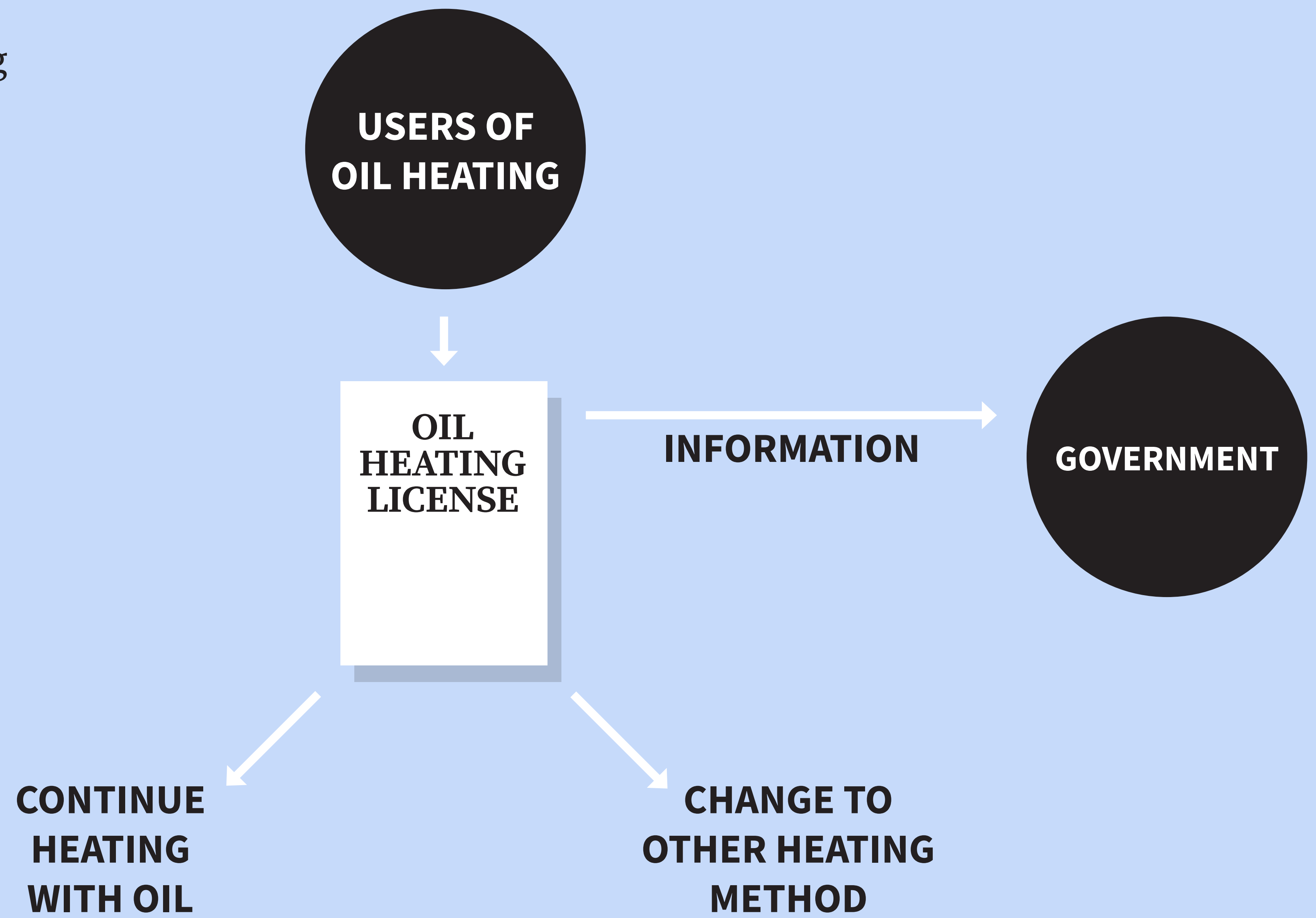
# THE SOLUTION

# OIL HEATING LICENSE

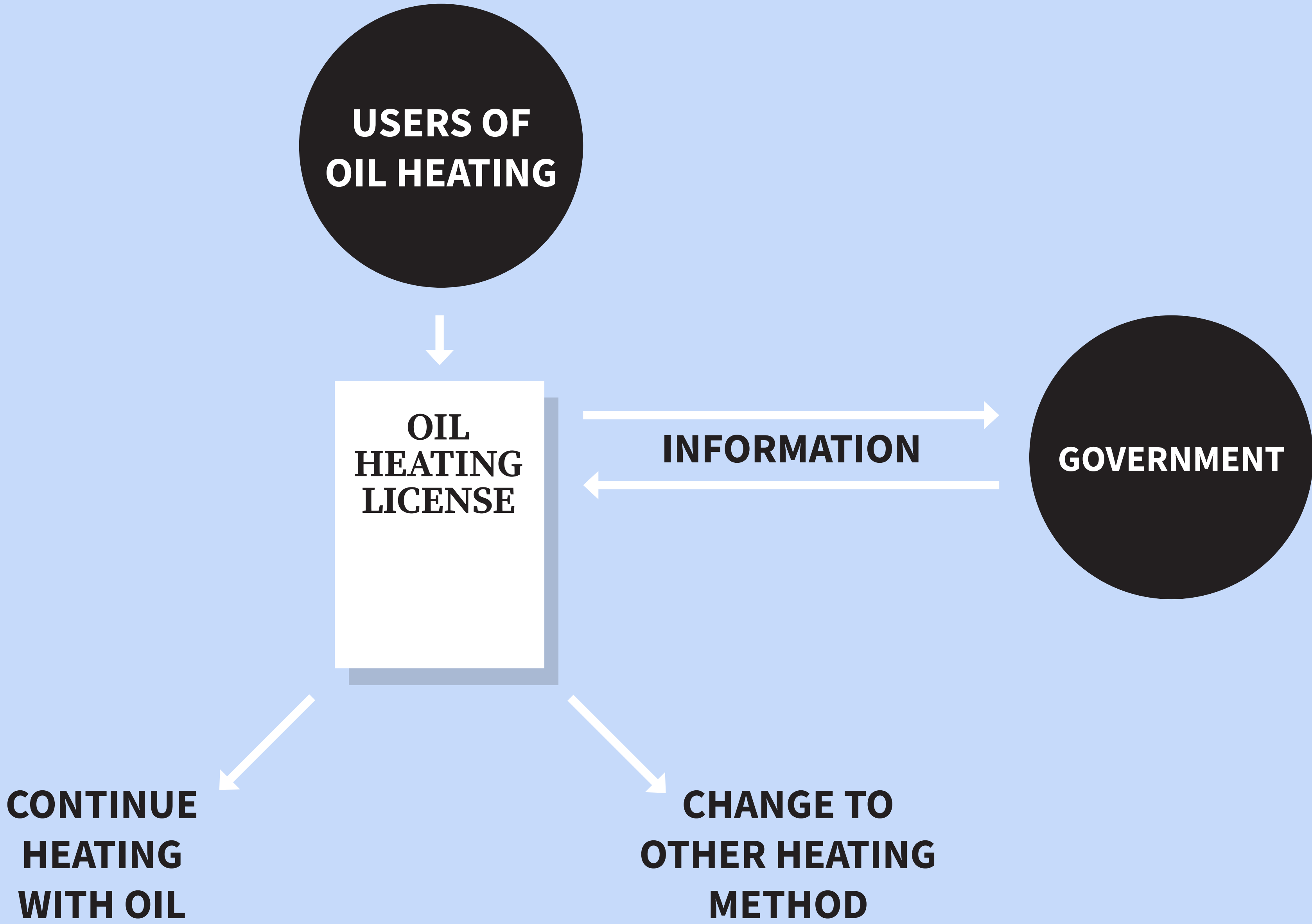
# Creating a trigger point



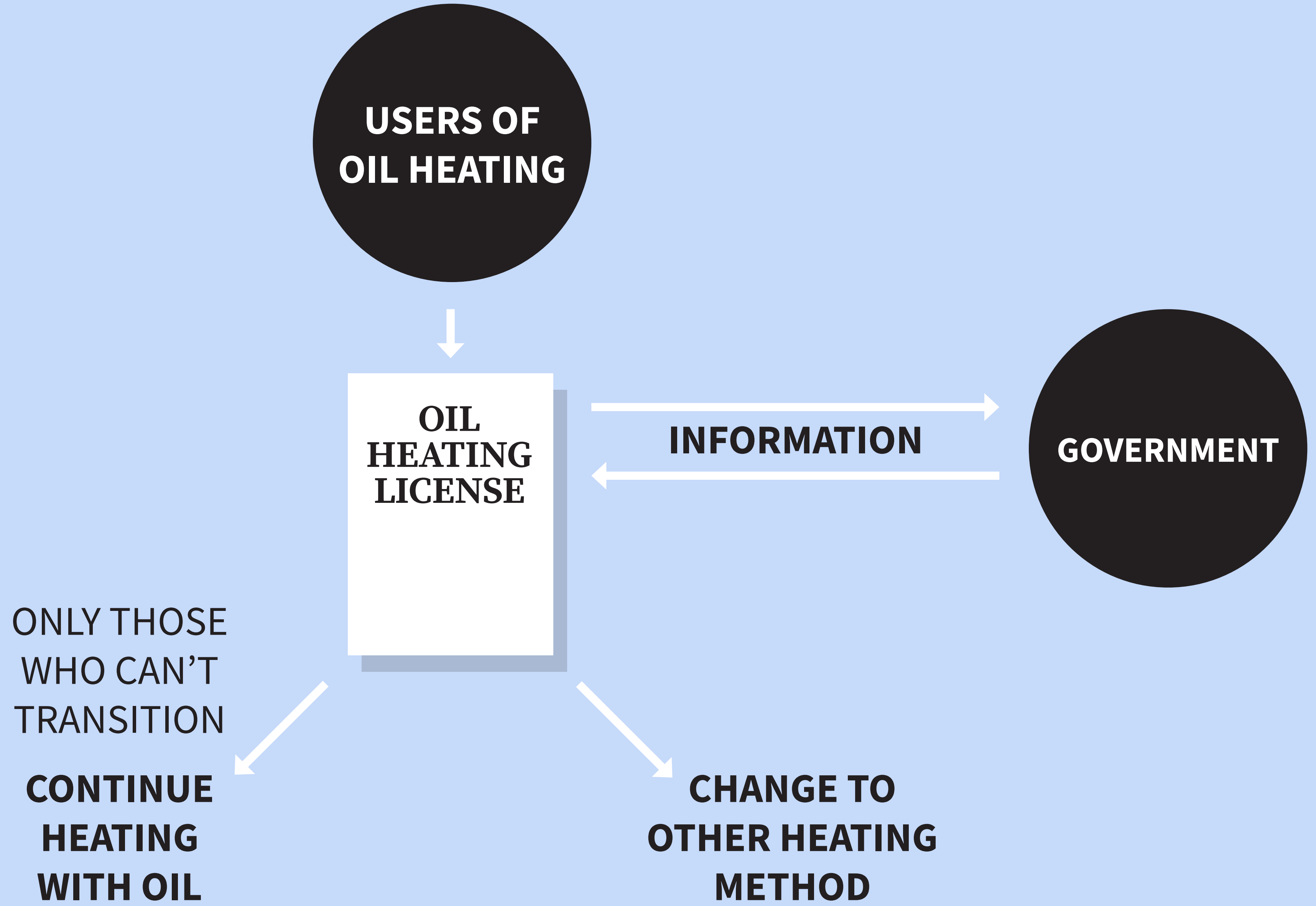
# Gathering information about users of oil heating



# Providing information to users of oil heating



# Limiting who gets the license



**Supporting**  
those who need it

**When we get the more capable to  
transition first, it requires less resources  
to give support to those who need it most.**

# Linking current support to emissions

**RENOVATION  
SUBSIDY**

**Liisa**  
pensioner

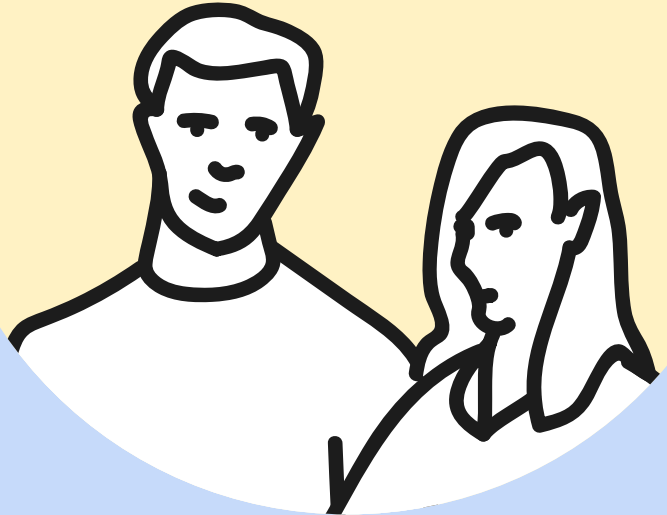


**Make**  
unemployed



**HOUSEHOLD  
CREDITS**

**Panu & Jenna**  
working couple





# Linking current support to emissions

ADDING SUSTAINABILITY  
REQUIREMENTS

**RENOVATION  
SUBSIDY**

**Liisa**  
pensioner

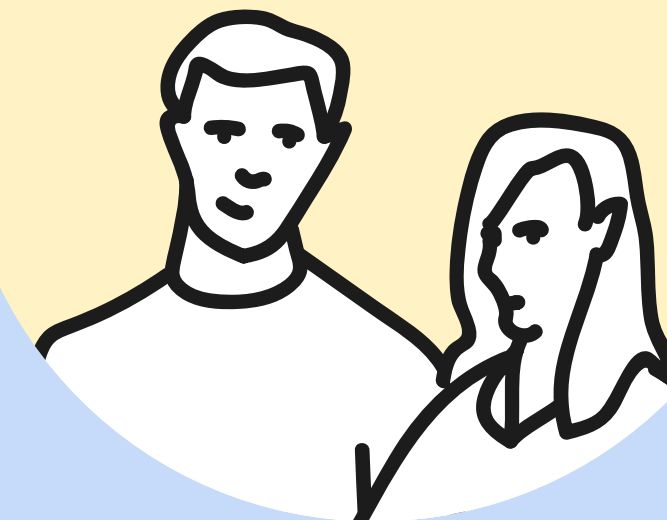


**Make**  
unemployed



**HOUSEHOLD  
CREDITS**

**Panu & Jenna**  
working couple



# Linking current support to emissions

ADDING SUSTAINABILITY  
REQUIREMENTS

**RENOVATION  
SUBSIDY**

**Liisa**  
pensioner



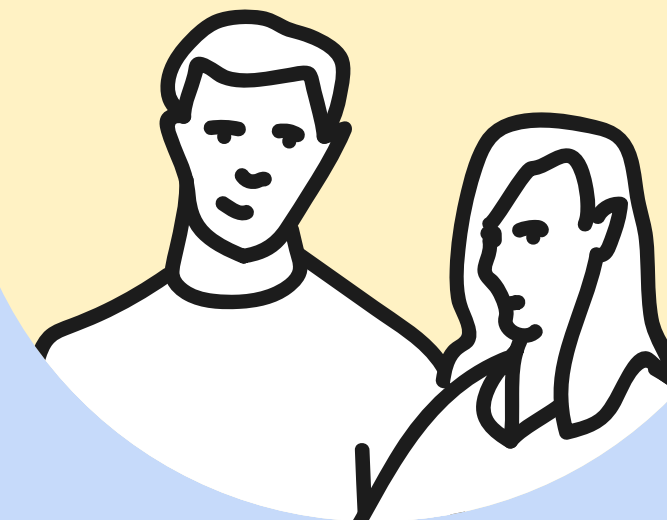
**Make**  
unemployed



INCREASED WHEN  
REDUCING EMISSIONS

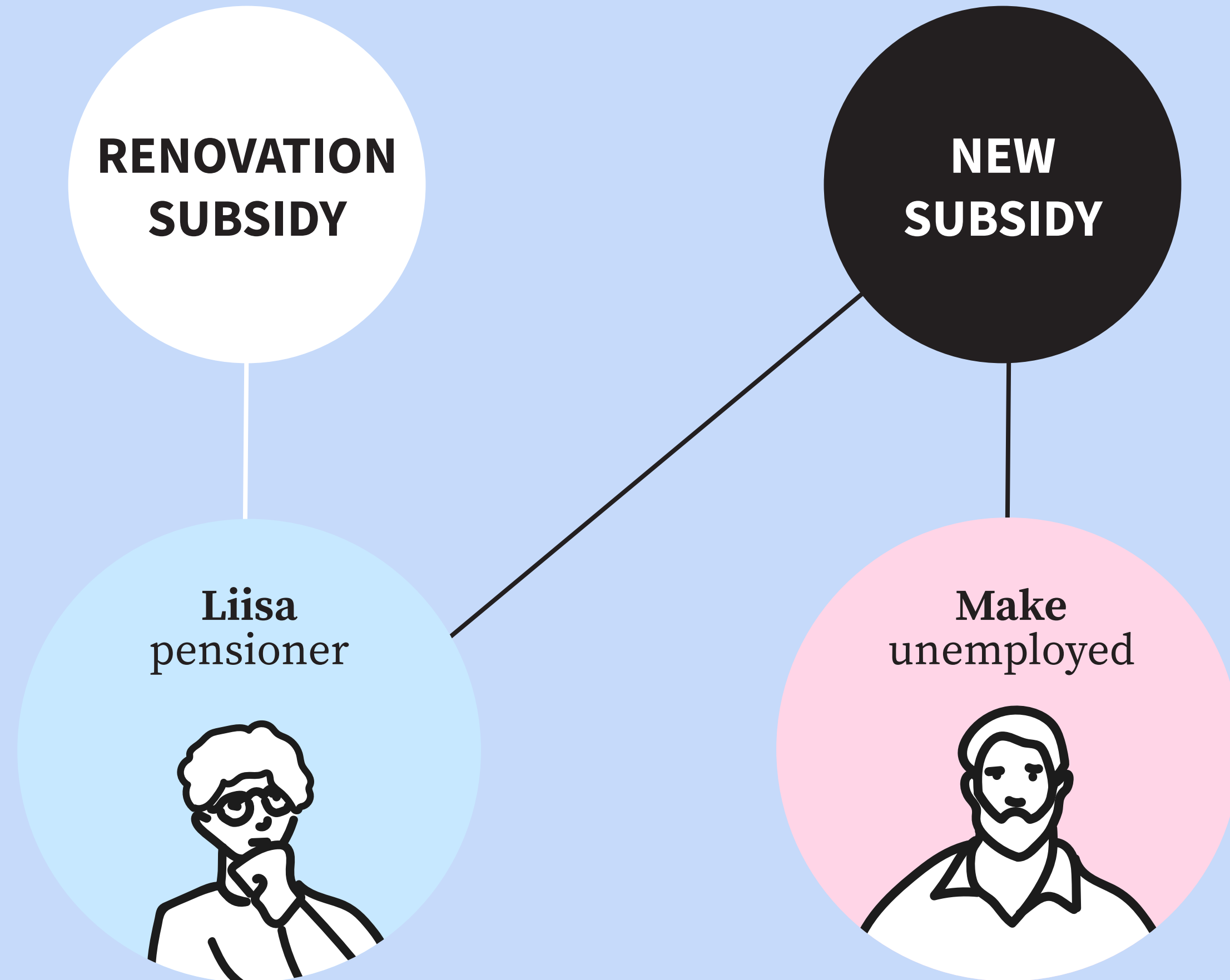
**HOUSEHOLD  
CREDITS**

**Panu & Jenna**  
working couple

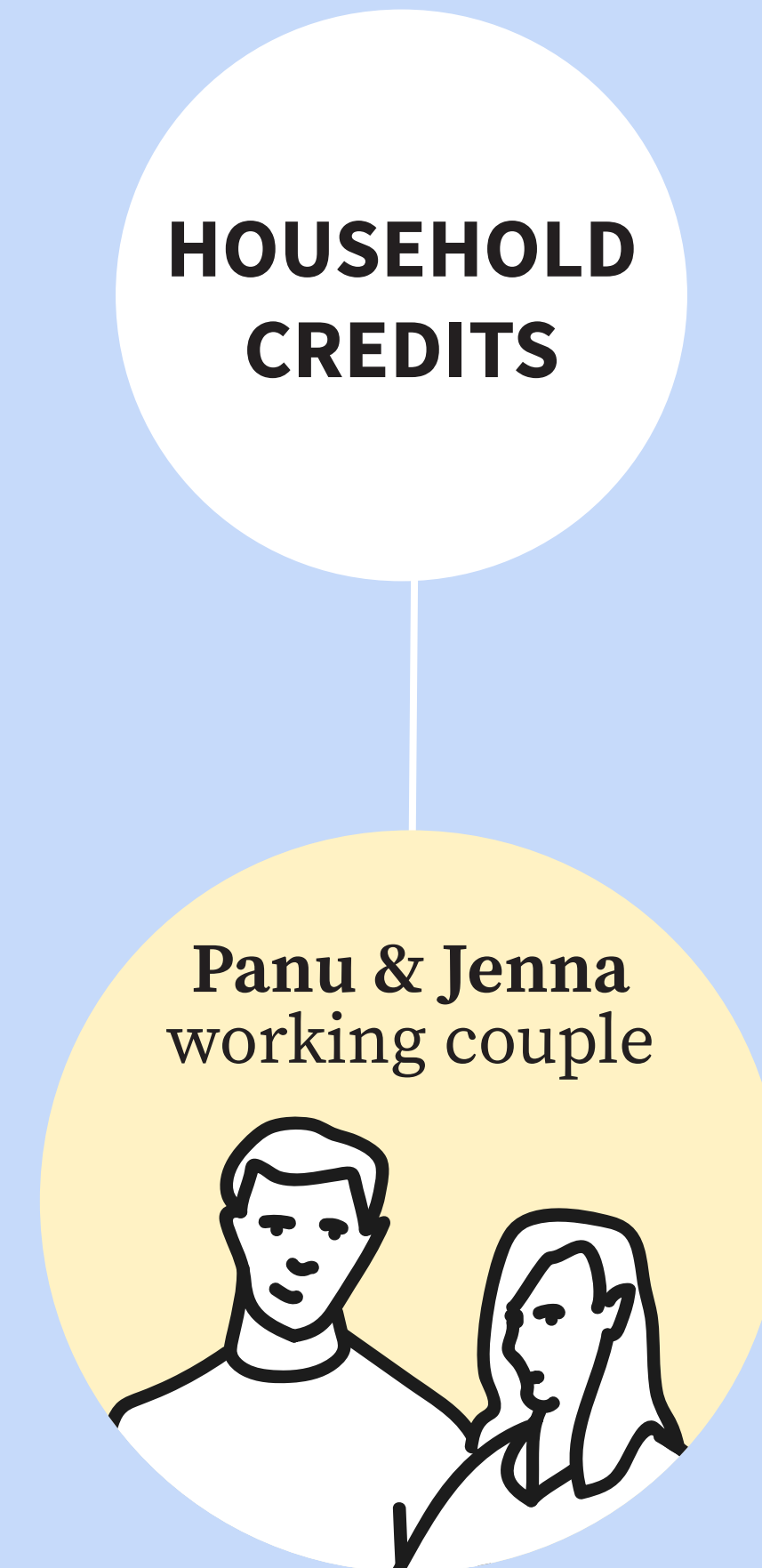


# New support for those with lower incomes

ADDING SUSTAINABILITY REQUIREMENTS



INCREASED WHEN REDUCING EMISSIONS



# New support for those with lower incomes

ADDING SUSTAINABILITY REQUIREMENTS

**RENOVATION  
SUBSIDY**

**Liisa**  
pensioner



BASED ON SIZE OF FAMILY,  
INCOME, HOUSE, AND LOCATION

**NEW  
SUBSIDY**

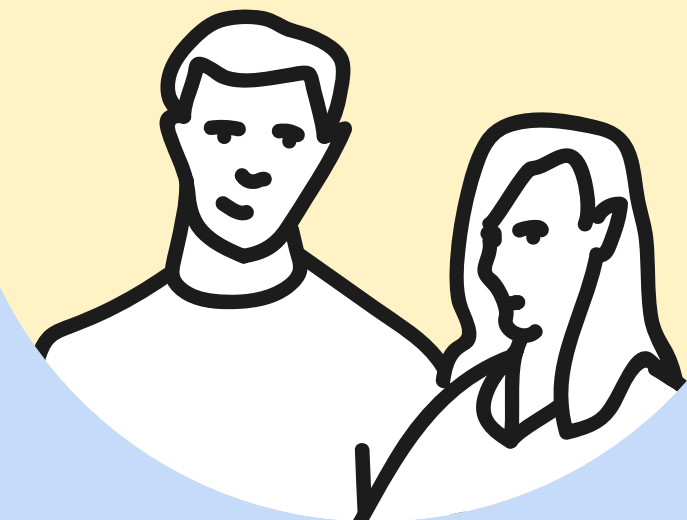
**Make**  
unemployed



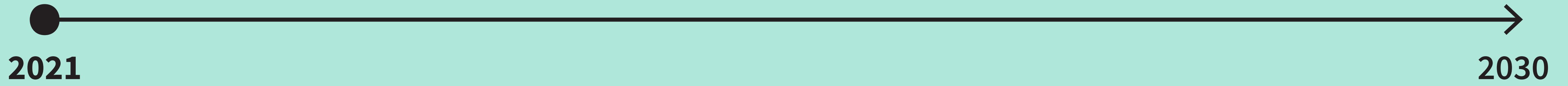
INCREASED WHEN  
REDUCING EMISSIONS

**HOUSEHOLD  
CREDITS**

**Panu & Jenna**  
working couple



# TIMELINE OF THE TRANSITION



- communicating the plan

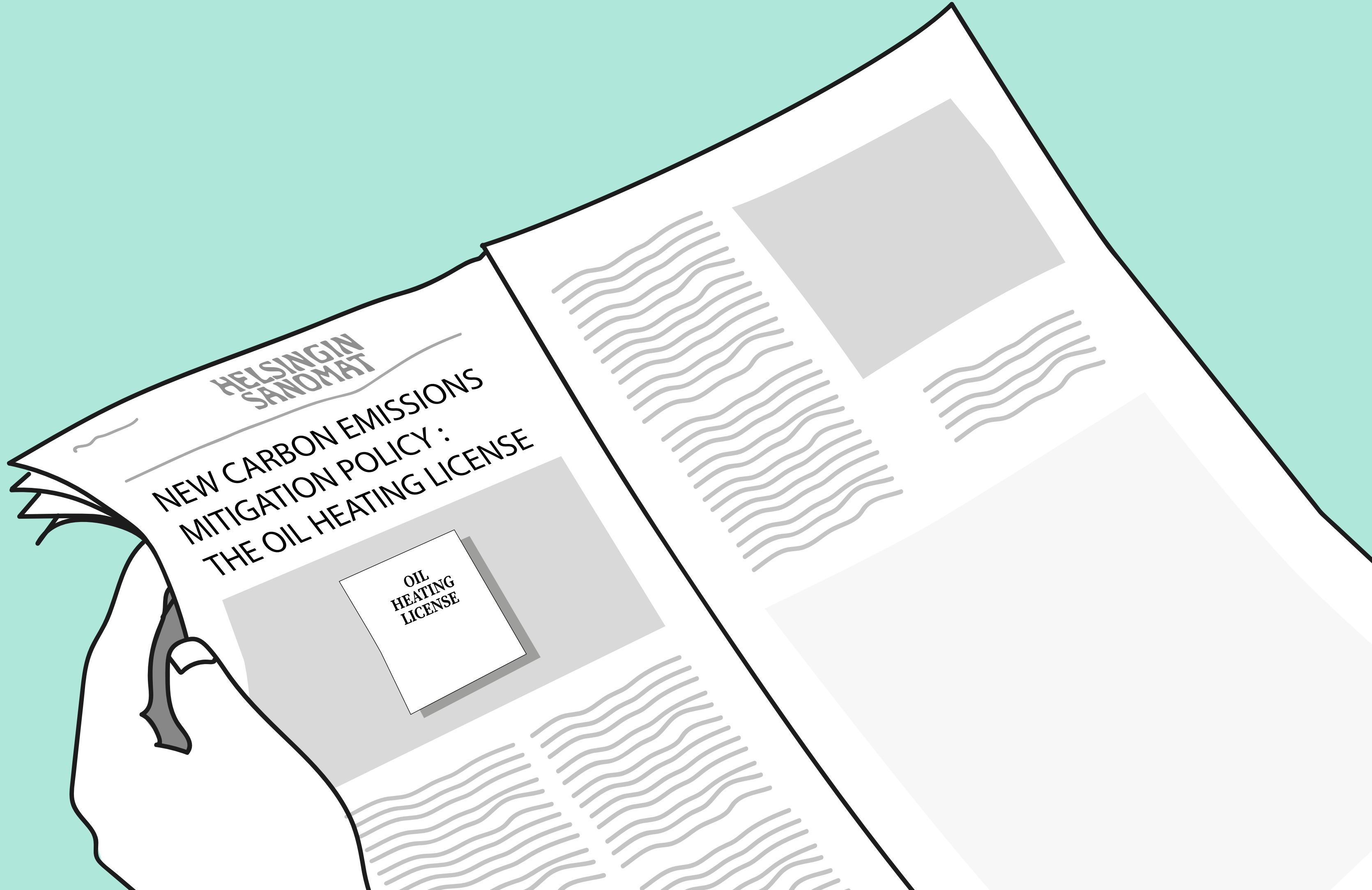




**2021**

**2030**

- communicating the plan



## ONBOARDING

2021

- collecting data of all users
- giving information to users
- everyone gets the license

2030





## ONBOARDING

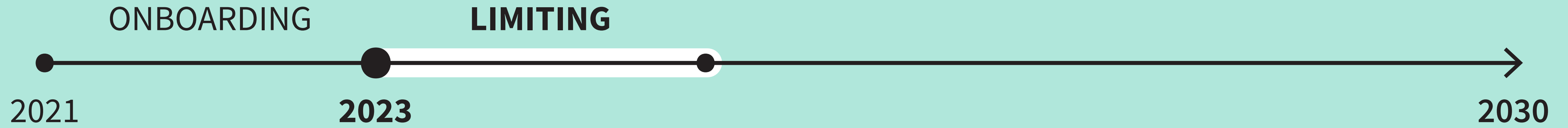
2021

- collecting data of all users
- giving information to users
- everyone gets the license

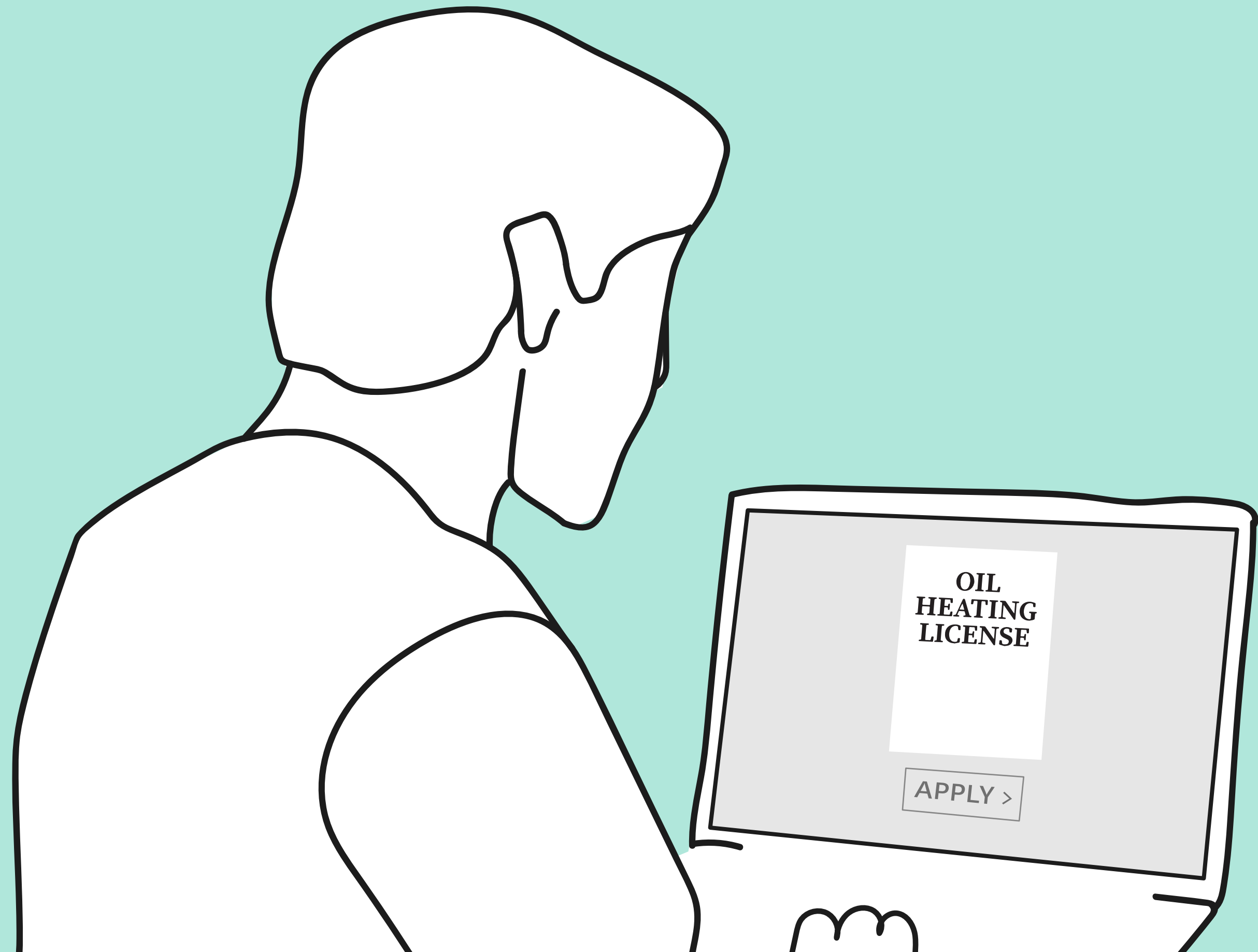
2030

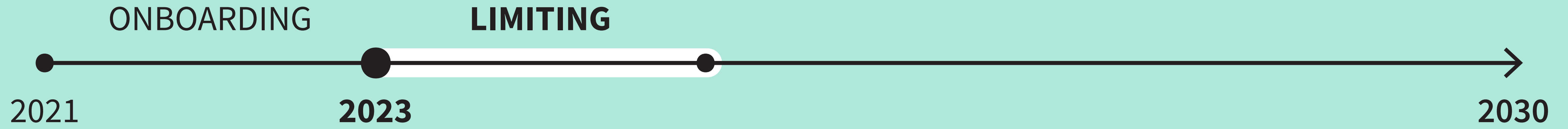


I think a ground source heat pump would be the best option.

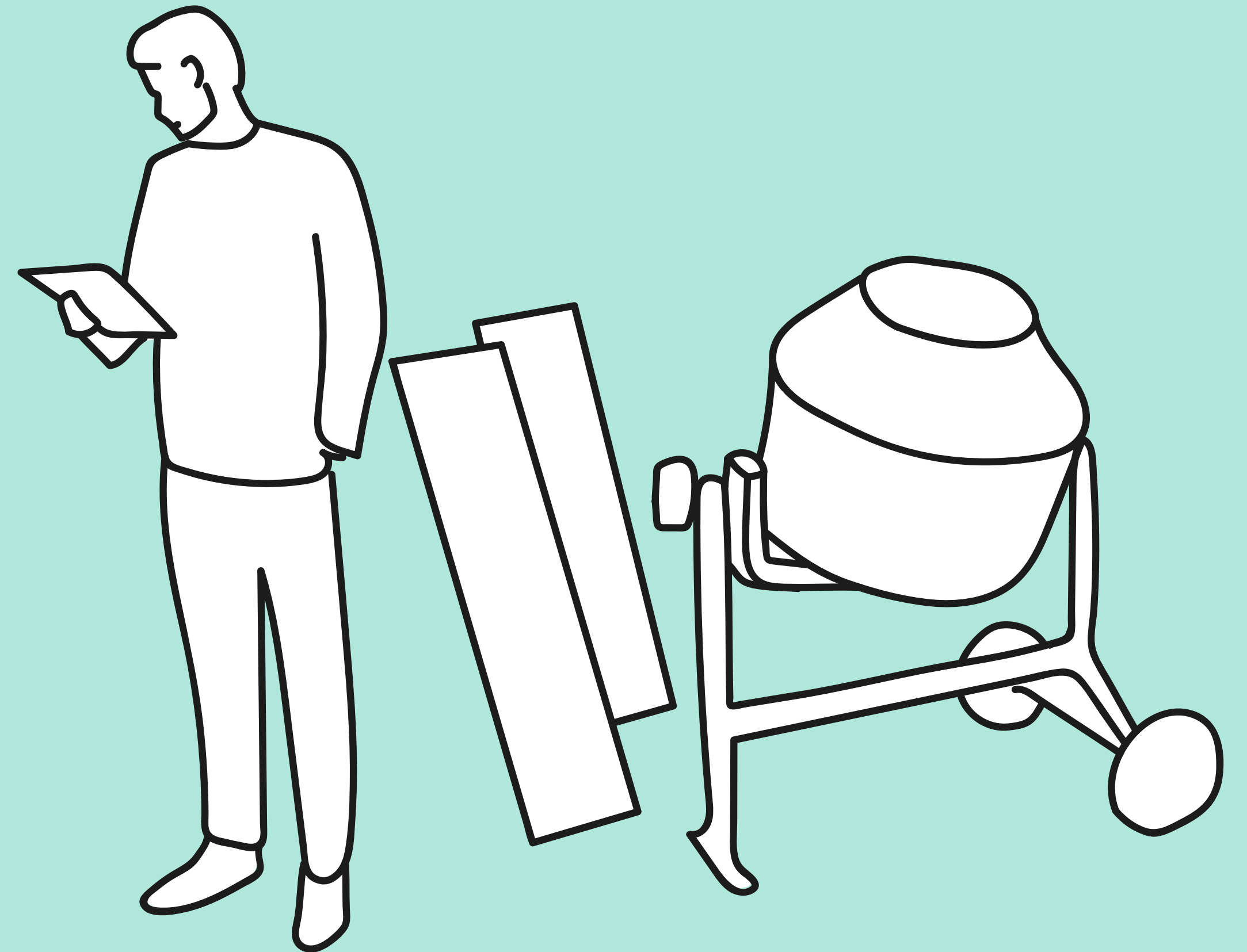


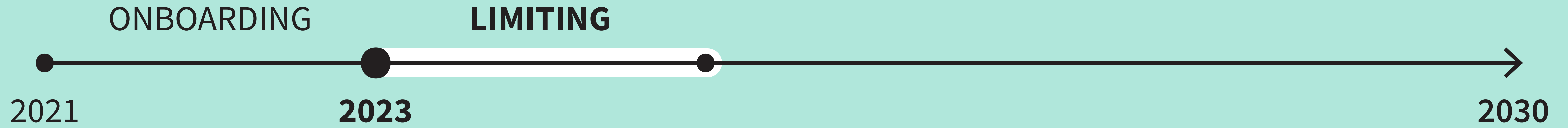
- data has been collected
- only those who need it get the license



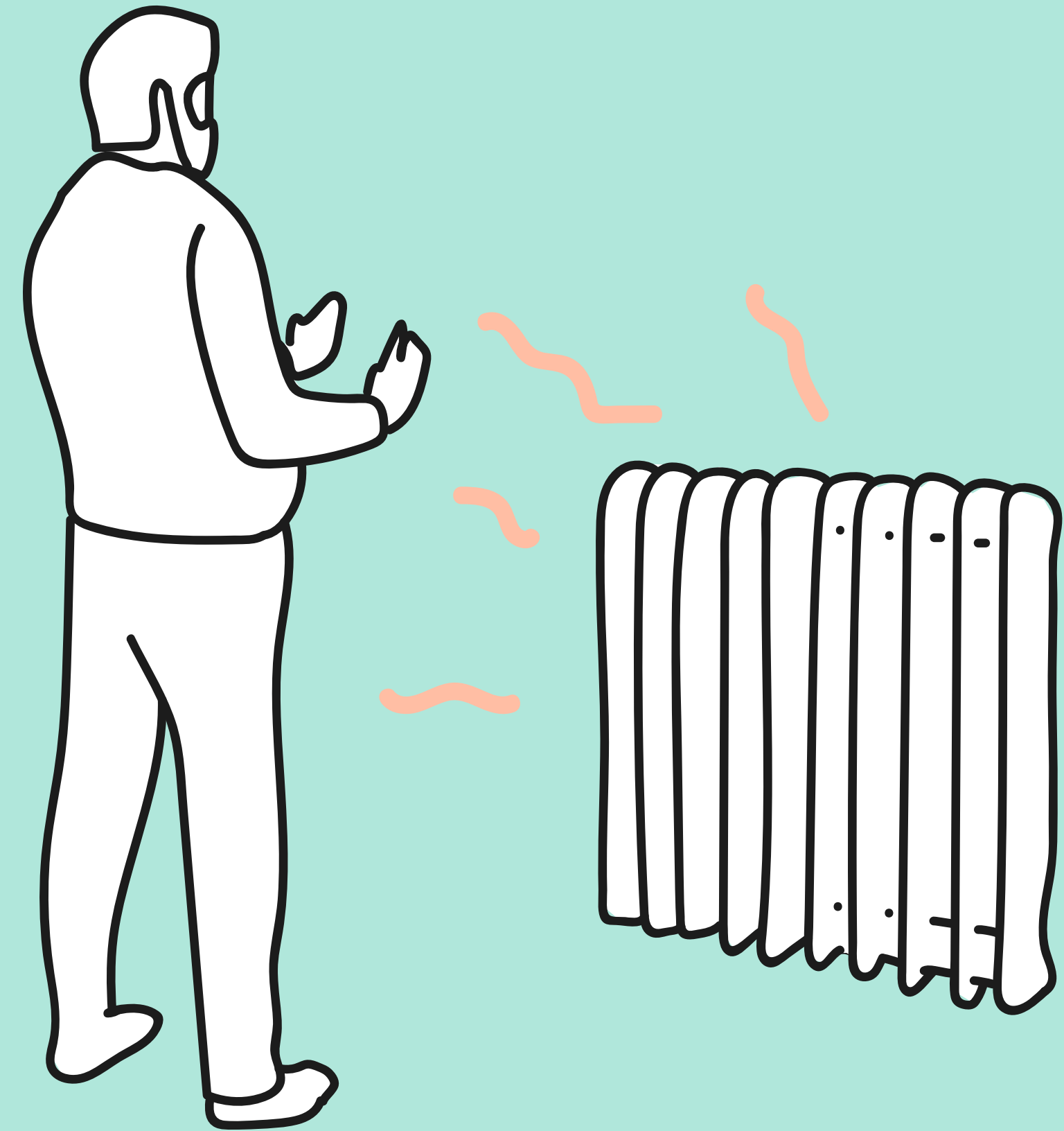


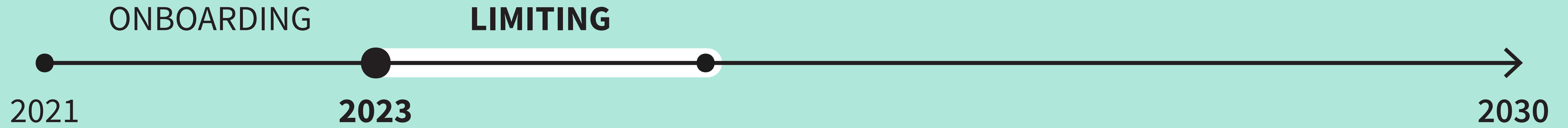
- data has been collected
- only those who need it get the license





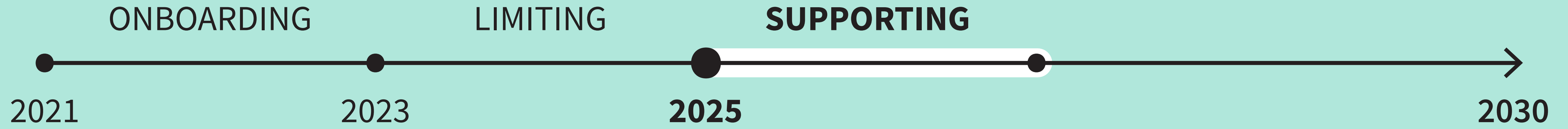
- data has been collected
- only those who need it get the license





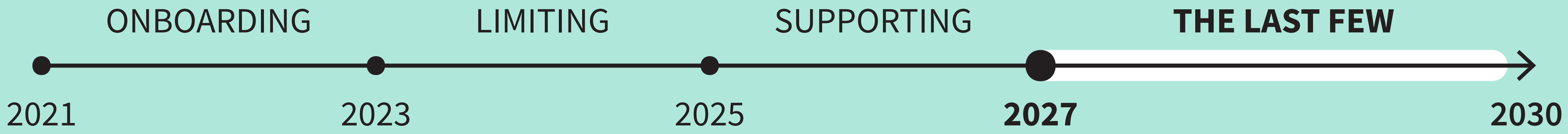
- data has been collected
- only those who need it get the license
- planning new support





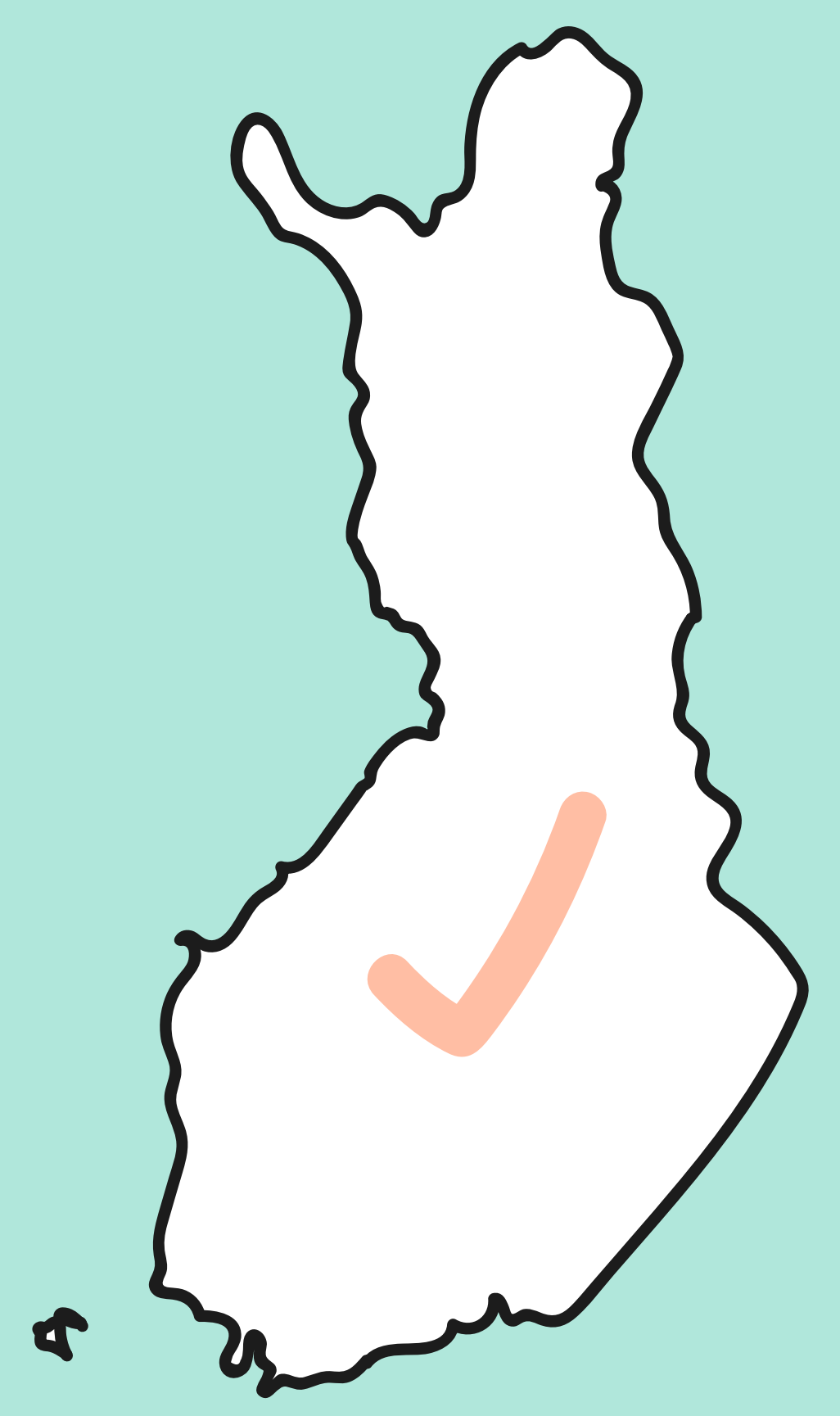
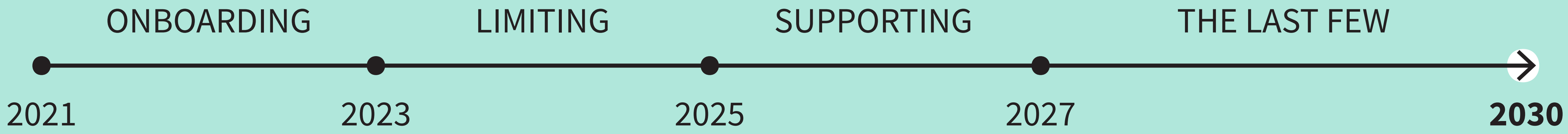
- new financial support to those who haven't been able to transition



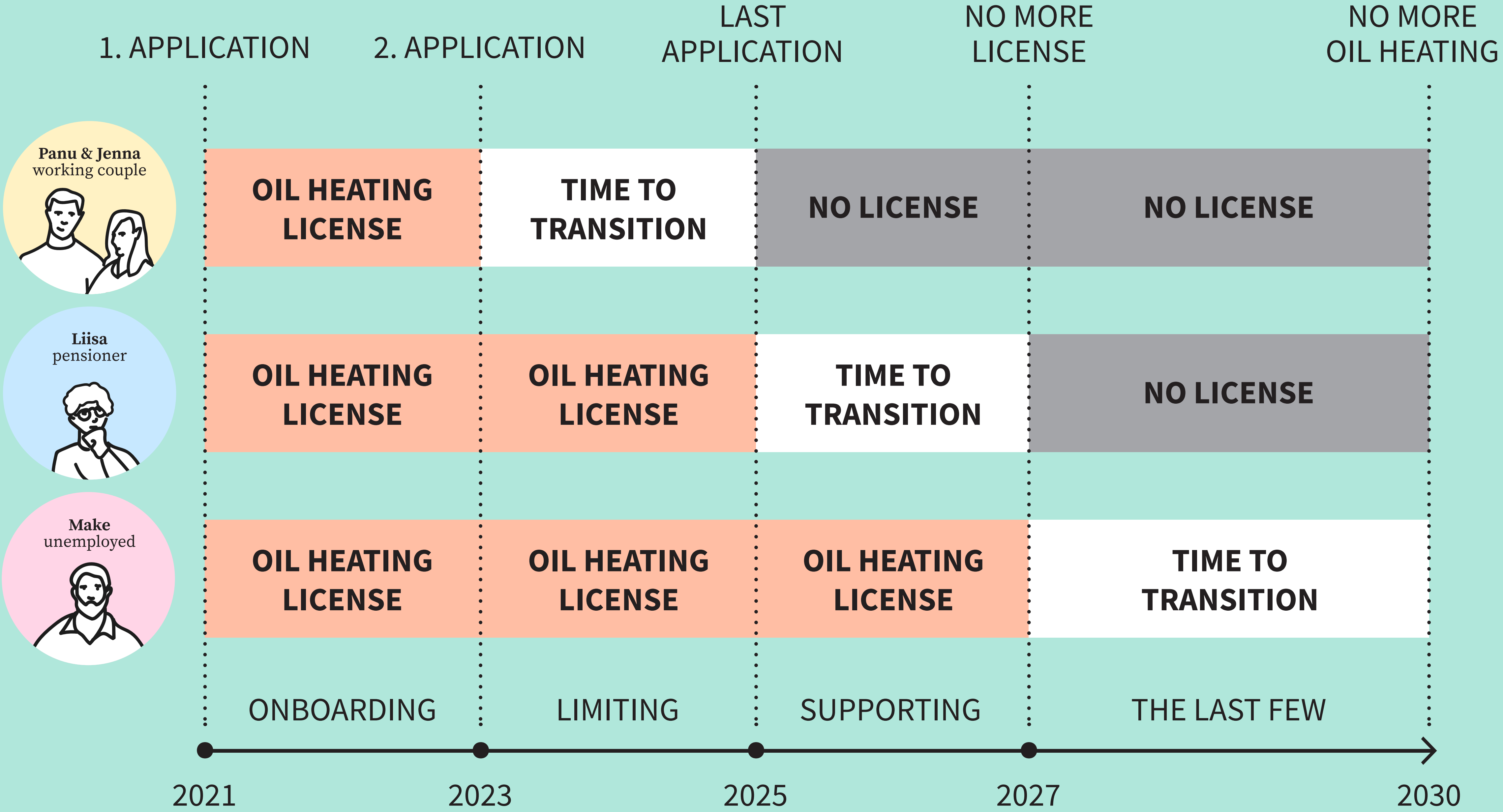


- more support for the last few

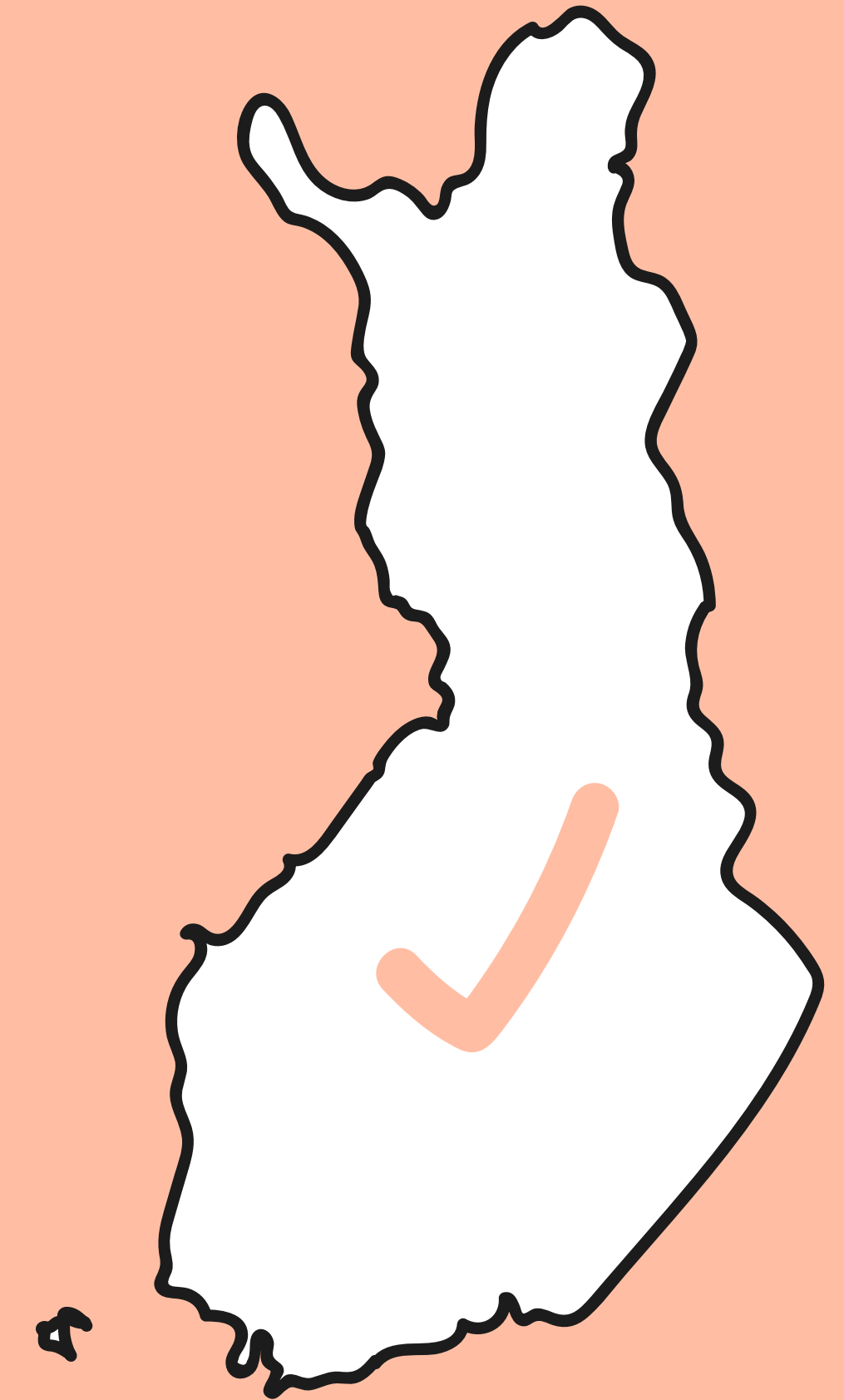








# License to Heat



**A fair transition based on capability and need.**

## SOURCES:

E. R. FREDERIKS, K. STENNER, E. V. HOBMAN (2015).

HOUSEHOLD ENERGY USE: APPLYING BEHAVIOURAL ECONOMICS TO UNDERSTAND CONSUMER DECISION-MAKING AND BEHAVIOUR.  
RENEWABLE AND SUSTAINABLE ENERGY REVIEWS, 41, 1385–1394.

M. LETTENMEIER, V. TOIVIO, R. KOIDE, A. AMELLINA (2019).

1.5-DEGREE LIFESTYLES: TARGETS AND OPTIONS FOR REDUCING LIFESTYLE CARBON FOOTPRINTS. TECHNICAL REPORT.  
INSTITUTE FOR GLOBAL ENVIRONMENTAL STRATEGIES, HAYAMA, JAPAN.

SYKE. CLIMATE DIET. [HTTPS://ILMASTODIEETTI.YMPARISTO.FI](https://ilmastodieetti.ymparisto.fi)