

LOW CARBON HEAT IN SCOTLAND

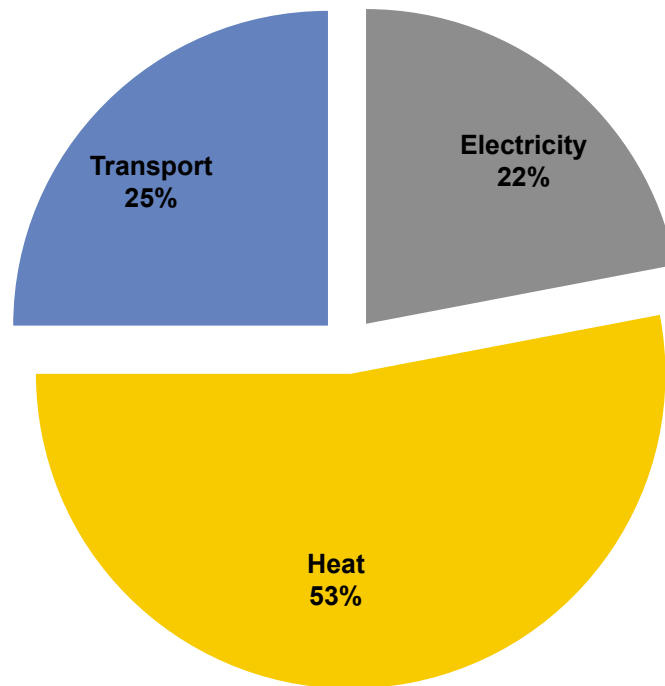
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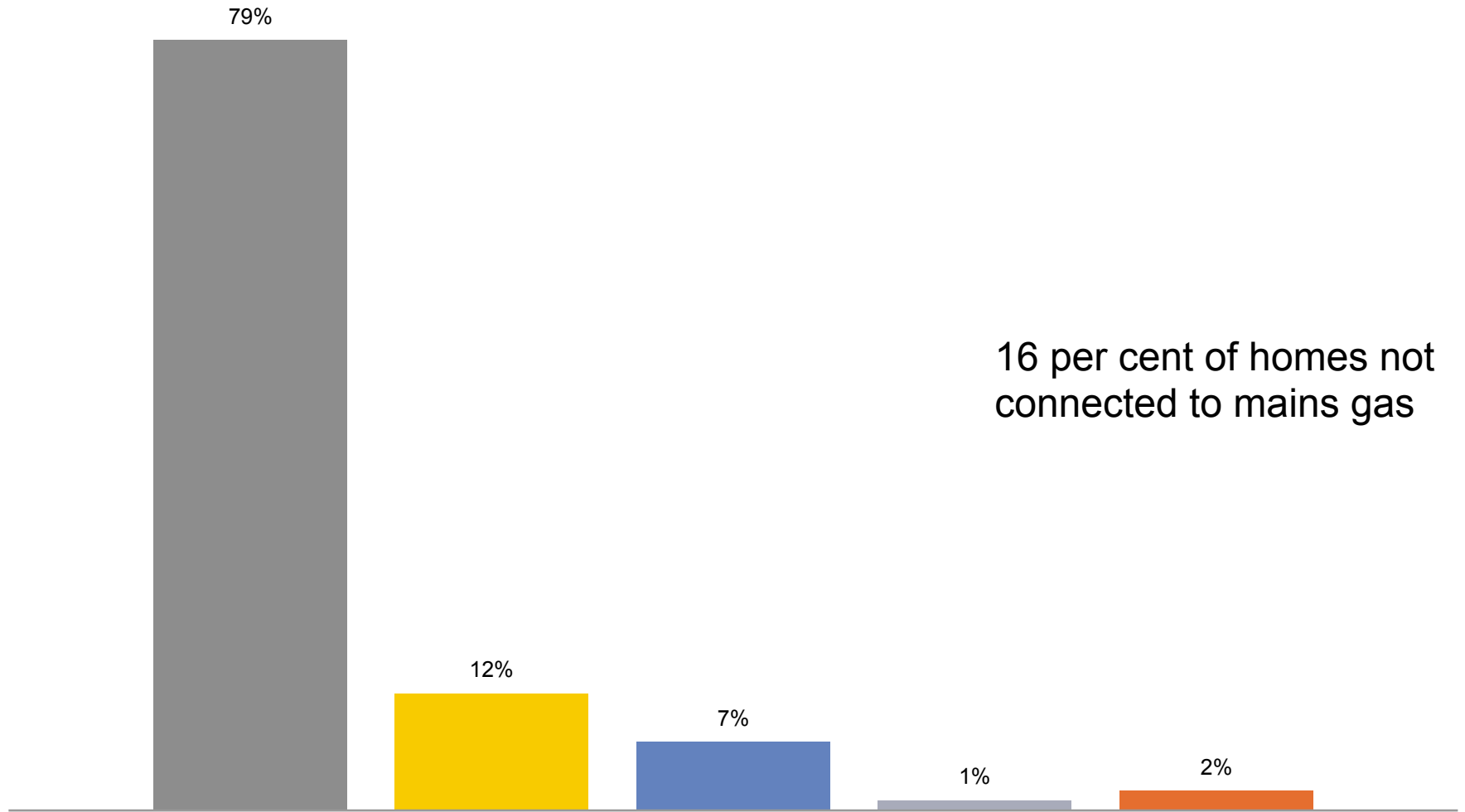
WHERE WE ARE NOW

Final Energy Consumption



Primary Heating Fuel for Households (2015)

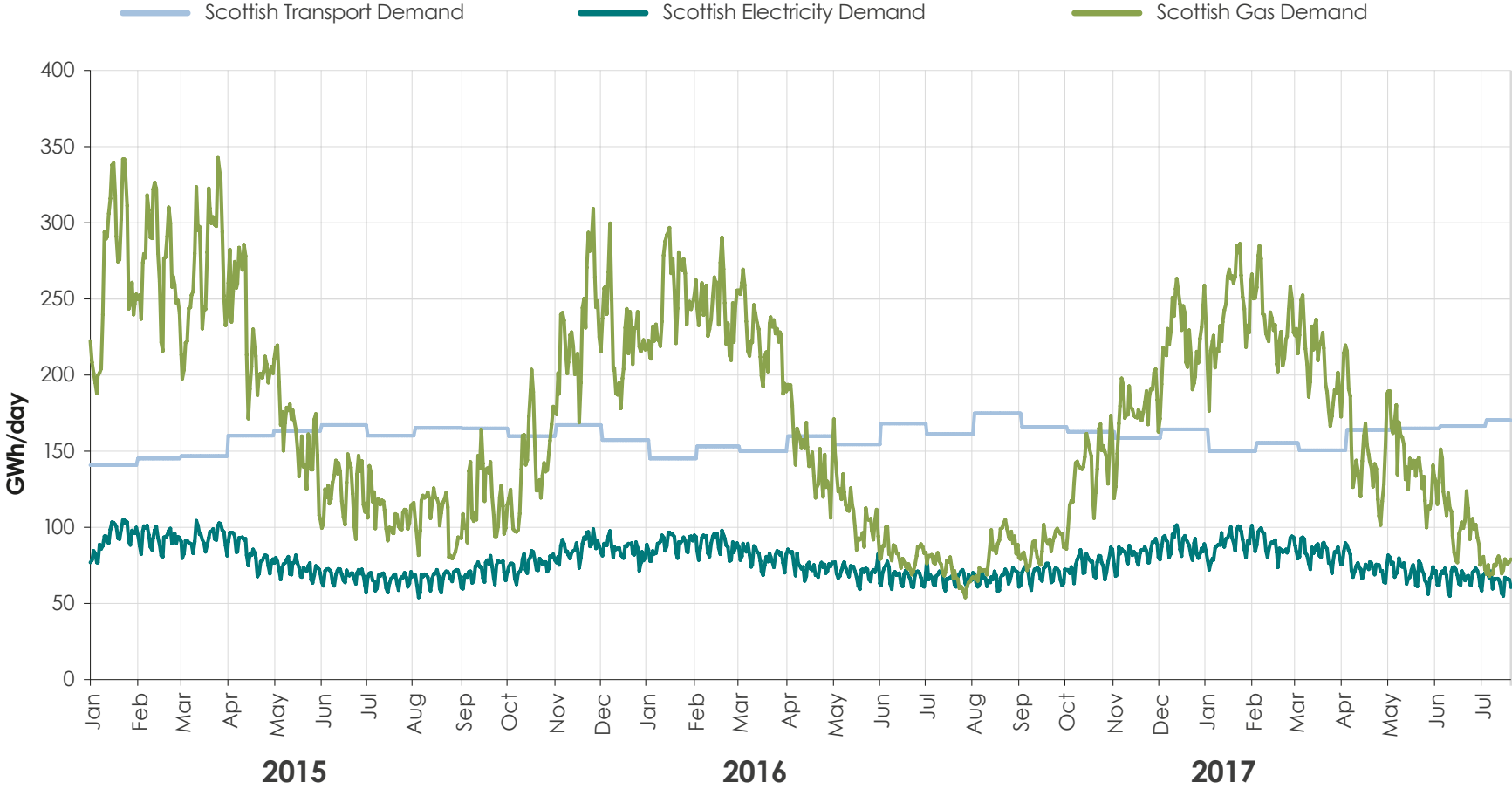
■ Mains gas ■ Electricity ■ Oil ■ Communal heating ■ Other



16 per cent of homes not connected to mains gas

Diagram 7

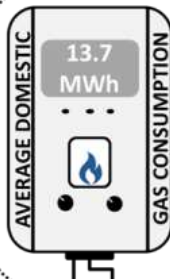
Yearly Pattern of Energy Consumption



Source: Scottish Energy Strategy 2017

HEAT – KEY FACTS

FOUR OUT OF FIVE SCOTTISH HOUSEHOLDS USE MAINS GAS AS THEIR PRIMARY HEATING FUEL



32% LOWER THAN 2005 AVERAGE

3% HIGHER THAN GB AVERAGE



RENEWABLE HEAT GENERATION IN 2015:

4,165 GWh

ENOUGH TO HEAT MORE THAN 10% OF SCOTTISH HOUSEHOLDS

(AROUND 300,000 HOUSEHOLDS)

In 2014 Scotland generated...

3.8%

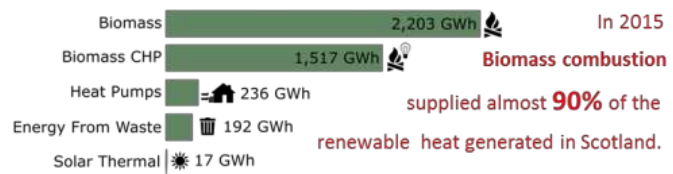


...of heat demand from renewables sources

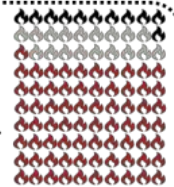
Using a range of scenarios to estimate heat demand, Scotland generated an estimated

5.3%-5.6% of heat demand from renewable sources in 2015

RENEWABLE HEAT TECHNOLOGIES



Large renewable heat installations account for less than 1% of all Scottish installations, but account for 71% of renewable heat output. 85% of installations are small, together producing only 11% of output.



16% OF SCOTTISH HOUSEHOLDS ARE IN OFF GRID AREAS



COMPARED TO 9% IN GB AS A WHOLE

AS ARE 87% OF SCOTLAND'S DOMESTIC RHI ACCREDITATIONS

Around 20% of capacity generated from the renewable heat incentive is produced by installations in Scotland



TARGETS AND PROGRESS

2050 80% GHG emissions reduction v 1990

- all buildings near zero carbon

2015 Progress

41% GHG reduction against baseline
 Mainly renewable electricity & waste
 Circa 30% reduction in gas use in buildings since 2005

Little progress on low carbon heat

2032 66% GHG emissions reduction

2017 draft Climate Change Plan for meeting annual targets to 2032



2017-2032 DRAFT PROPOSALS FOR HEAT – AMBITION AND UNCERTAINTY



**76% emissions reduction achieved from
6% reduction in heat demand
80% of heat from low carbon**



**96% emissions reduction achieved from
10% reduction in heat demand
94% of heat from low carbon**



**14% reduction in emissions largely from
efficiency/productivity & EU ETS
CCS from 2030**

NEAR TERM SG ACTIONS

2018 SEEP Route map

- Buildings near zero carbon wherever feasible by 2050, in socially and economically sustainable way
- £0.5B over 4 years

LA powers for integrated LHEES

District heating regulation - investment and consumer protection

2018 Warm Homes Bill and revised fuel poverty definition

Finance

- District Heating Loan Fund, LCITP
- Energy strategy £20M Energy Investment & £60M Low Carbon Innovation funds

Work with stakeholders – future for low carbon heat

- UK Government heat pathways & future for renewable heat beyond RHI

UK CCC RESPONSE TO DRAFT PLAN

Building targets lack credibility

2032 50% space heating from low-carbon sources ‘a considerable achievement’

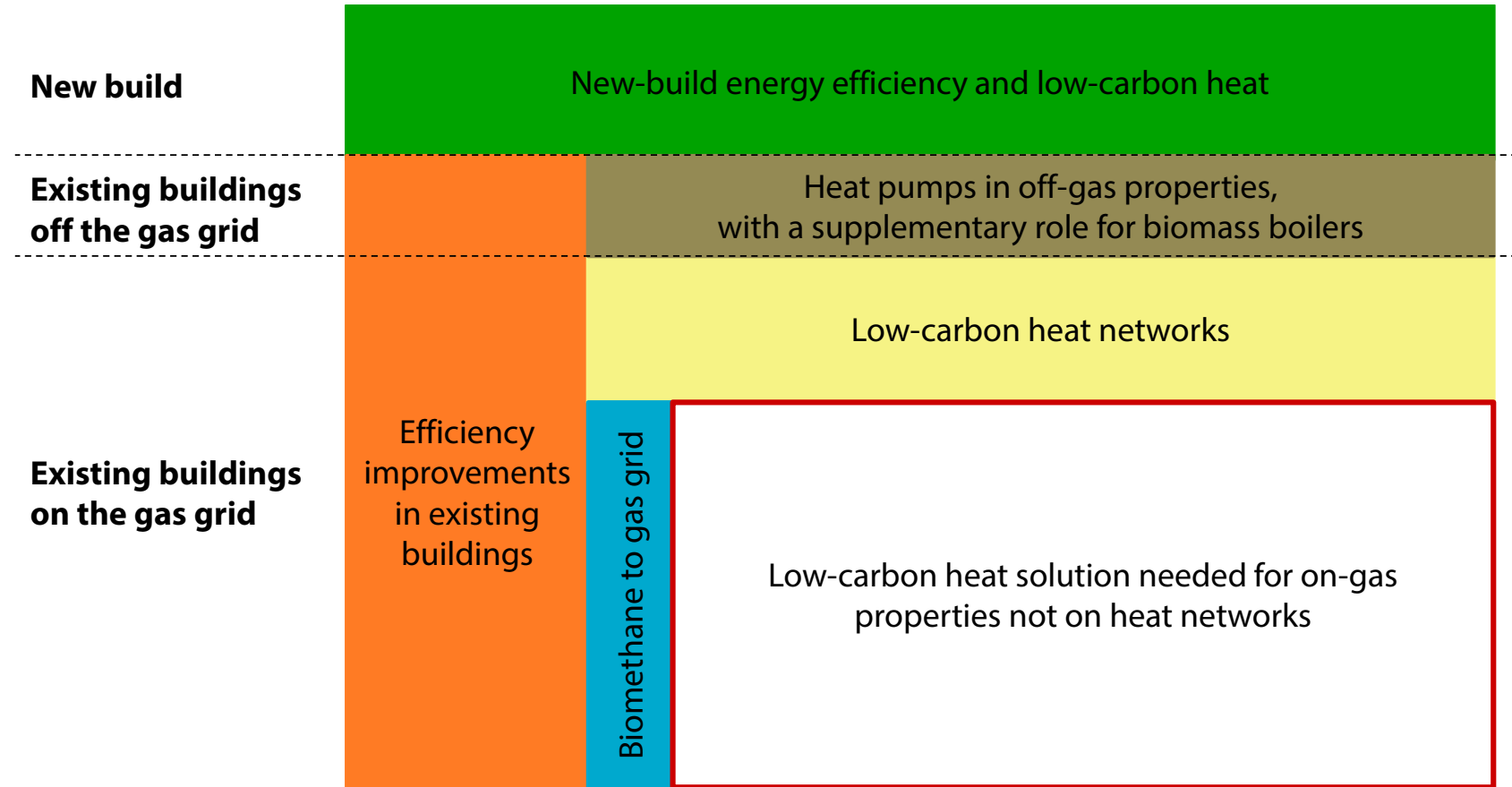
Immediate action required on ‘low-regret’ measures

Final Plan needs specifics on how low-carbon heat will develop

- What this means for energy infrastructure
- Public responses to changing heating systems



Figure B4.1. Low-regrets measures and the remaining challenge for existing buildings on the gas grid



Source: CCC (2016) *Next Steps for UK Heat Policy*.

FUTURE OF GAS

Scotland's 25,000 km gas network supplies around 1.9 million

Industry lobbying for new role for natural gas as feedstock for hydrogen economy with carbon capture and storage (CCS)

By 2025 UK expected to import 67% of gas

- Geo-political & cost unknowns & Brexit risk of UK exposure to global markets

SG energy strategy - hydrogen scenario

- Demand for gas as input increases by 60%

Technology system (SMR+CCS+H transmission) & CCS commercial viability unproven

CCS policies uncertain

- UK Gov Clean Growth Strategy demonstration funding, but risks that technologies will not be cost effective when required

Regulatory and market changes reserved to UK Government

UK Clean Growth Strategy has no clear vision for gas, mentioning it five times in 165 pages

TRANSITION TO LOW CARBON HEAT WILL REQUIRE

Retrofit of buildings to very high standards to manage total cost

Zero carbon new buildings

Supply chain professionalisation and project management for whole building solutions

Policies combining building and technology regulation, taxation and incentives

Unified enforcement and quality management/performance guarantees

Evidence base from demonstrators - what works best, & how, in different contexts

Long term planning, coordination and collaboration beyond commissioning and contracting

Hearts and minds and inclusive economic opportunities