APSE Climate Change and Renewable Energy Network Advisory Group (Southern Region) 26th January 2021

Designing environment strategies and tailoring plans for local climate risks

Nigel Riglar
Director of Environment & Community Services –South Gloucestershire Council

Local authorities have 3 main influences

LEAD

In our own operations

ENABLE

a low carbon region with our programmes, policies and decisions

INSPIRE

Business and residents to take climate action themselves

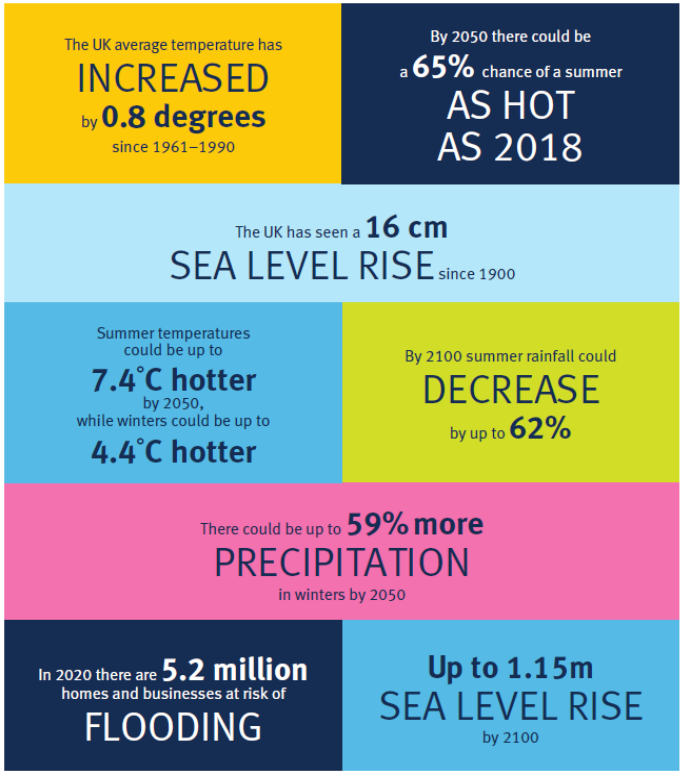
UNDERPINNED BY A STRONG STRATEGY

ADEPT

Why we need an FCERM Strategy

Climate change is happening now. We expect to see an increase in extreme weather and events such as flooding, coastal erosion and landslips.

That is why our **Flood & Coastal Erosion Risk Management Strategy** – approved by Ministers and Parliament in September 2020 - provides a longer term vision of how we will better protect and prepare homes and businesses from flooding and coastal change and create **climate resilient places**.



A nation ready for, and resilient to, flooding and coastal change

Environment Agency

The Role of Local Authorities

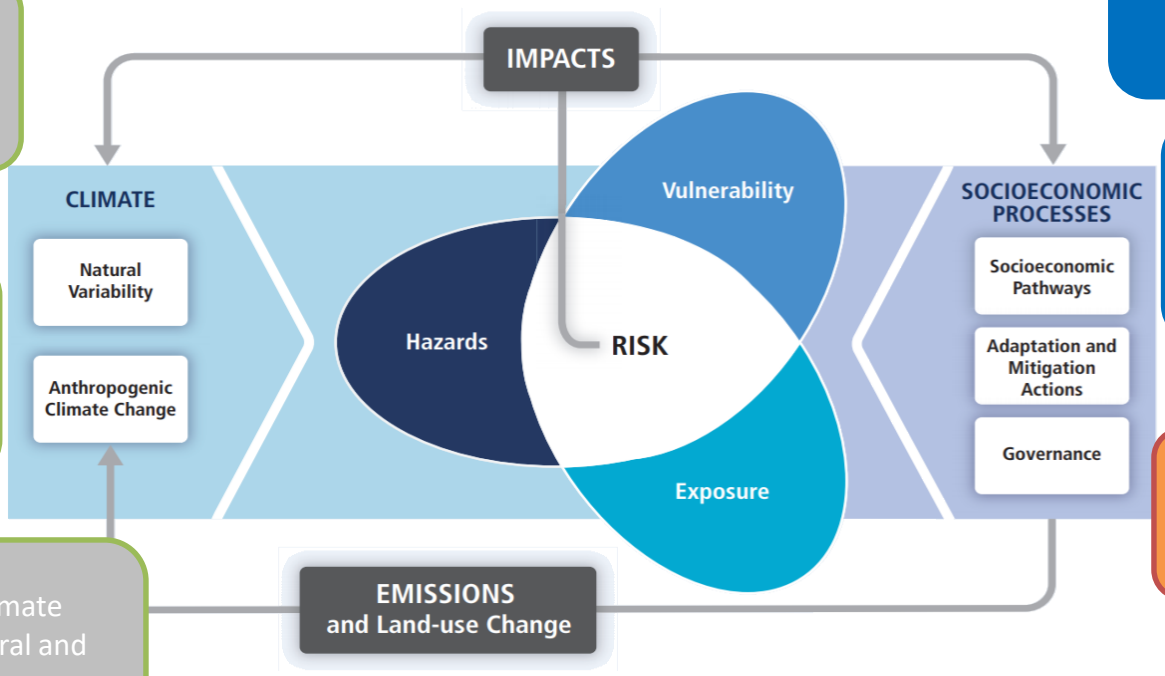
Setting corporate **plans and policies**	Working with businesses and industry	Protecting natural capital & supporting green infrastructure
Infrastructure planning	Land use planning	Building public health and community resilience

A framework for planning for adaptation – its all about the risks!

Adaptation
Adjustments in processes to take account of changing conditions

Adaptive capacity
The ability to successfully respond to climate change effects

Resilience
The amount of climate change effects natural and human systems can cope with whilst maintaining their essential functions



Vulnerability
the degree to which a system is susceptible to adverse impacts

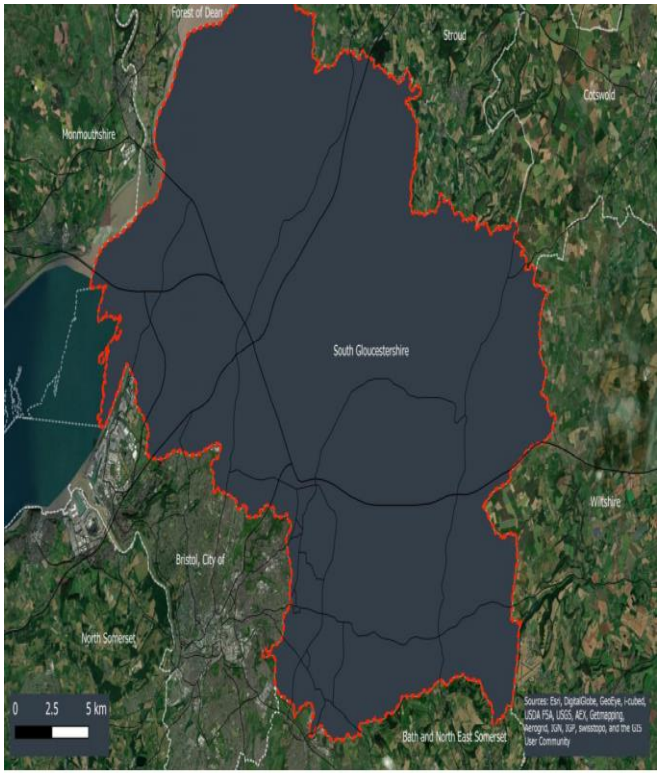
Sensitivity
The degree to which an area is effected by climate change

Exposure
Likelihood of climate change impacts occurring

Source: IPCC WGII AR5 Report – p21

South Gloucestershire

- On the 17 July 2019 South Gloucestershire Council declared a Climate Emergency. In doing so the Council has pledged to provide the leadership to enable South Gloucestershire to become carbon neutral by 2030.
- The Council signed the original UK100 pledge to ensure 100% clean energy by 2050 and repledged to support UK net zero focusing on mitigation. Also signed the ADEPT blueprint for a green recovery.
- On the 27 April 2020 the Council approved a Year 1 Climate Emergency Action Plan extending progress to address its own scope 1 and 2 emissions, progressing actions addressing district wide emissions and to develop its adaptation/resilience response.



South Gloucestershire Council

Responding to the Climate Emergency

Working with residents, businesses and organisations across the district, South Gloucestershire Council is continuing to tackle the increasing challenges of climate change.

As an area we are:

- Reducing our carbon emissions to become carbon neutral by 2030
- Restoring nature
- Adapting to the local impacts of a changing climate.

What is the council doing?

The council set out an action plan and is delivering this work in partnership with others. You can read details of this plan on the council website. Current projects include an area-wide study of renewable energy opportunities

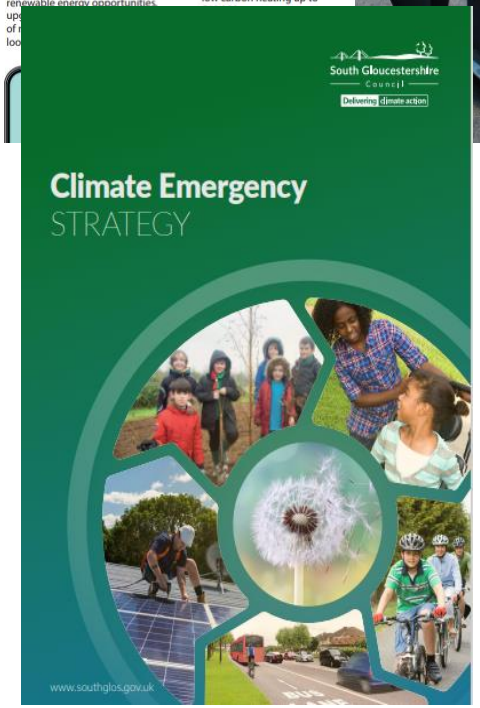
vehicle infrastructure, trials of managing highway verges to increase biodiversity, and flood water risk mapping. Each December, the council will review progress and set out a plan for the next year. To deliver the 2030 goal, it needs to work with everyone in the area.

What can you do now?

Sign the South Gloucestershire Climate Emergency Pledge here: *www.southglos.gov.uk/climatepledge*

Retrofit your home to save energy: The following schemes can support you:

- Green Homes Grant-Vouchers for energy efficiency improvements or low carbon heating up to

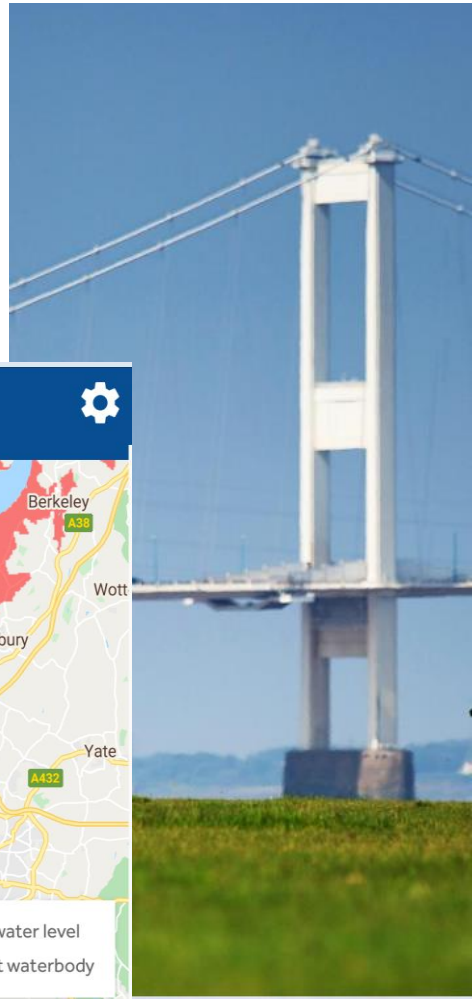


South Gloucestershire Climate Emergency Pledge

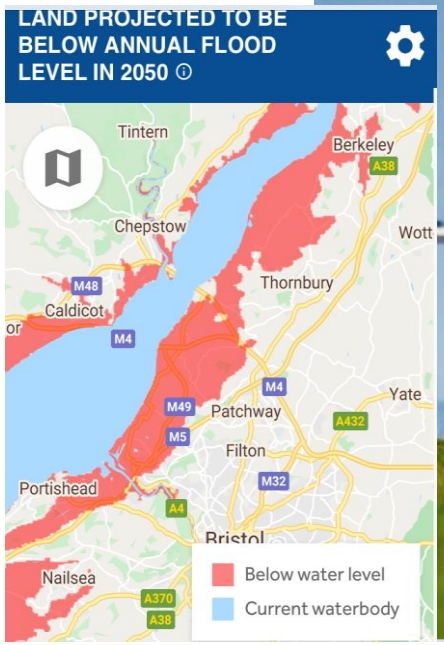
https://www.southglos.gov.uk/environment/climate-change/climate-emergency/

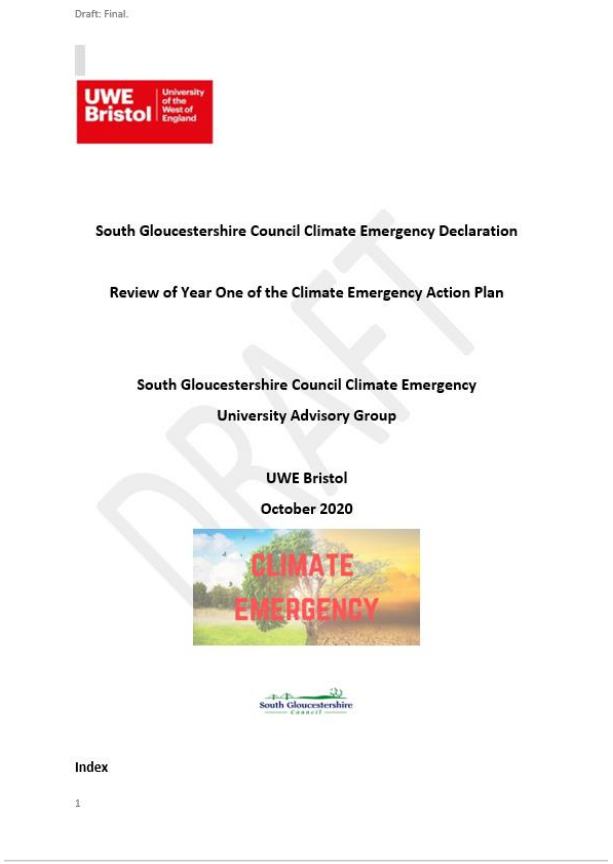
Key areas of risk for most UK local authorities

The UK Climate Change Risk Assessment (UK CCRA) 2017 identifies six climate change risk that need to be managed as a priority in the UK. These six immediate priority areas are related to:



1. **Risk of Flooding**
2. **Impact of High Temperature on Health and Wellbeing**
3. **Risk to Natural Capital**
4. **Risk of Future Water Shortages**
5. **Impacts on Global Food System**
6. **Risk from Pests and Disease**

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UWE Bristol | University of the West of England

South Gloucestershire Council Climate Emergency Declaration

Review of Year One of the Climate Emergency Action Plan

South Gloucestershire Council Climate Emergency
University Advisory Group

UWE Bristol

October 2020

South Gloucestershire Council

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1

University of the West of England appointed as SGC expert Climate Emergency Advisory Panel – Year 1 recommendations

Acceleration of Adaptation consideration and moving to implementation actions

Integration of climate considerations into routine council business

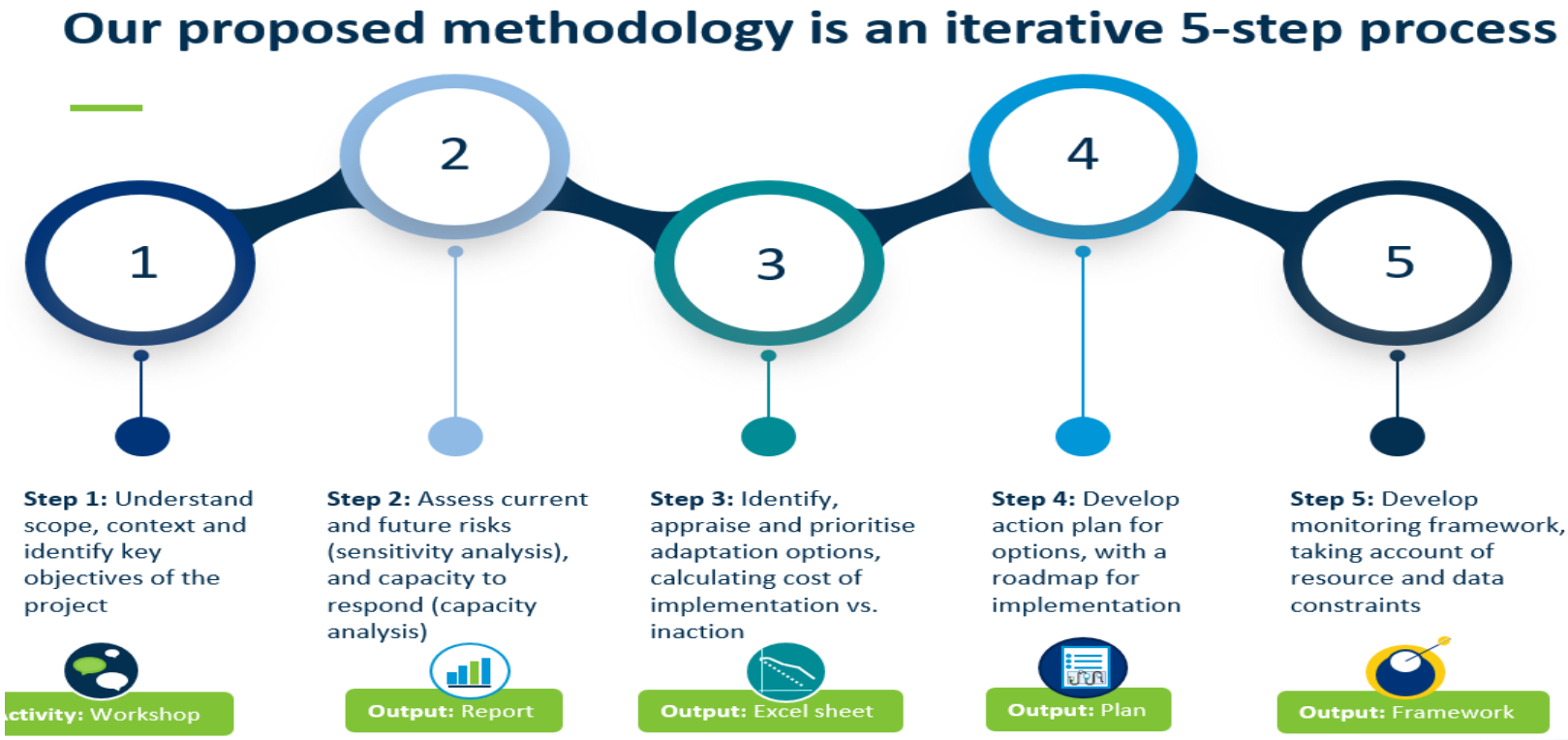
Action to enhance co benefits of ecological recovery and climate action.

Outreach activity to win hearts and minds, link to local COP 26 activity.

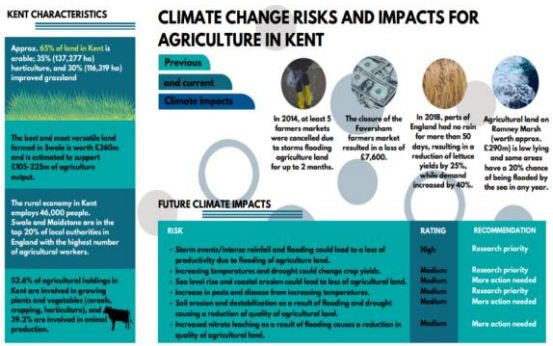
Greater emphasis on community engagement and actions for citizens is desirable and this could link to a local Citizens' Assembly and /or local COP 26 activity.

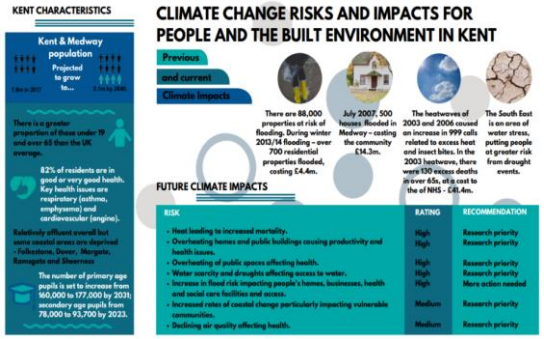
Promoting a managed fund established from the proceeds of offsetting and dedicated to reinvestment in verifiable offsetting or carbon management / adaptation projects.

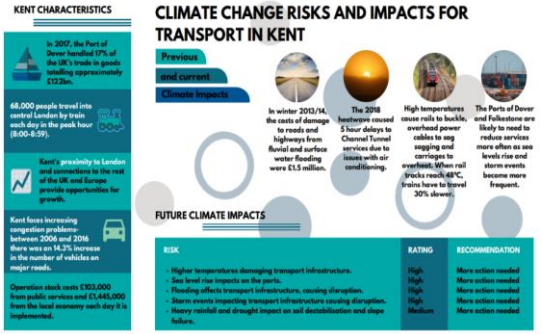
Next steps for South Gloucestershire

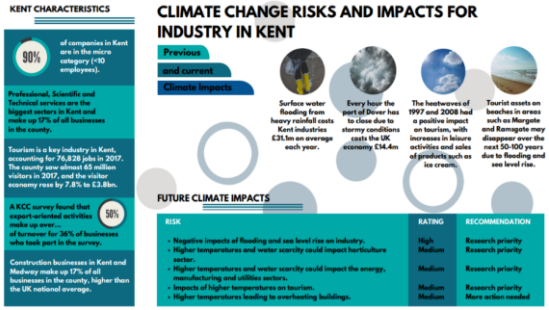


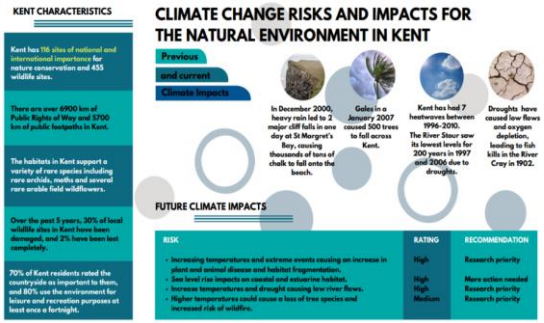
Example of Local Risk and Impact Assessments - Kent

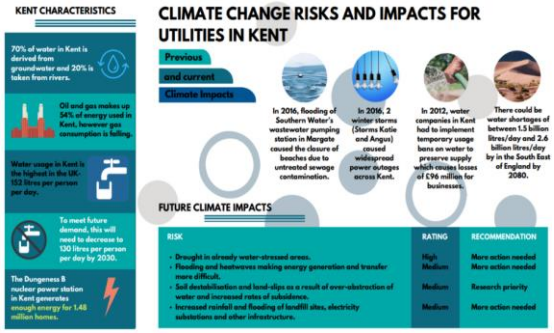




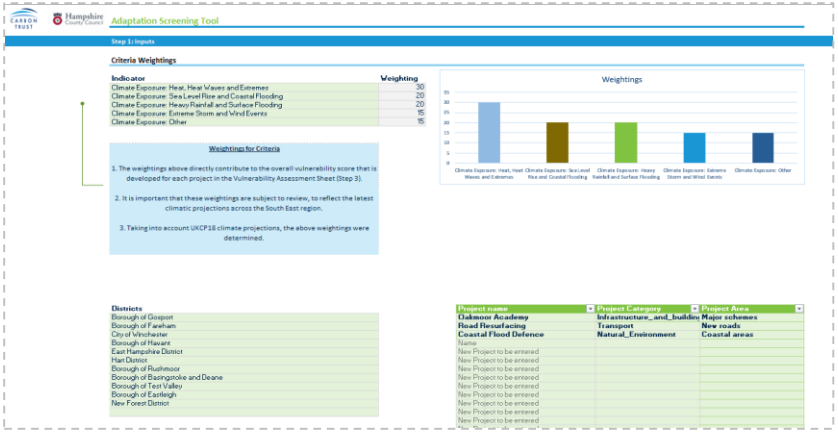


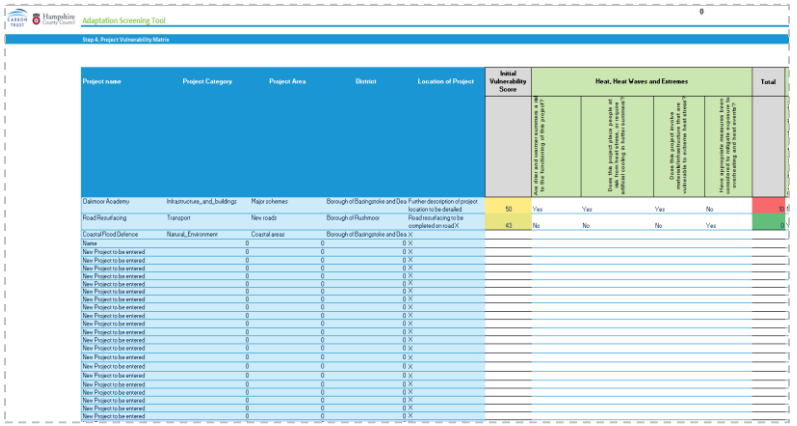






Hampshire Adaptation Project Screening Tool





1. To assist HCC with key decisions relating to the delivery and maintenance of new and existing projects.

2. The tool seeks to identify and assess the vulnerability and exposure of projects across the Council.

3. To identify specific elements of a project which are vulnerable to changing climate variables across the South East region.

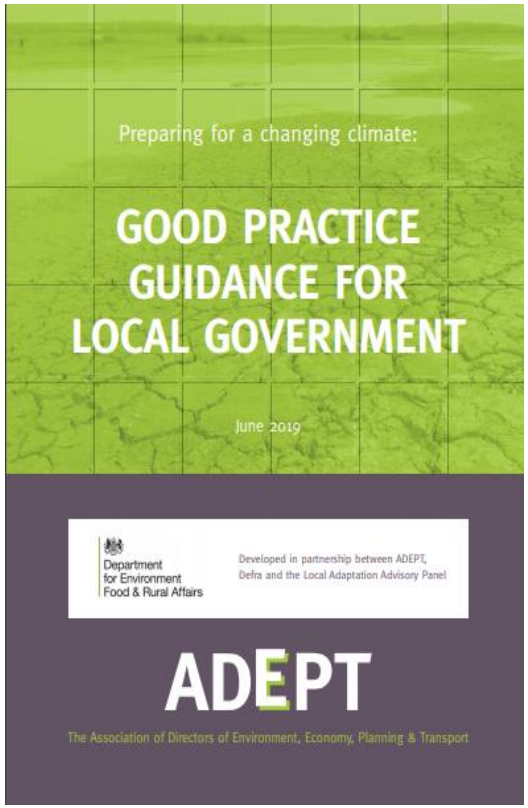
4. Individually assess, score and rank projects based on overall levels of vulnerability.

5. Provide the Council with a clear outlook on the strategic actions and decisions needed in order to reduce vulnerability.

www.southglos.gov.uk

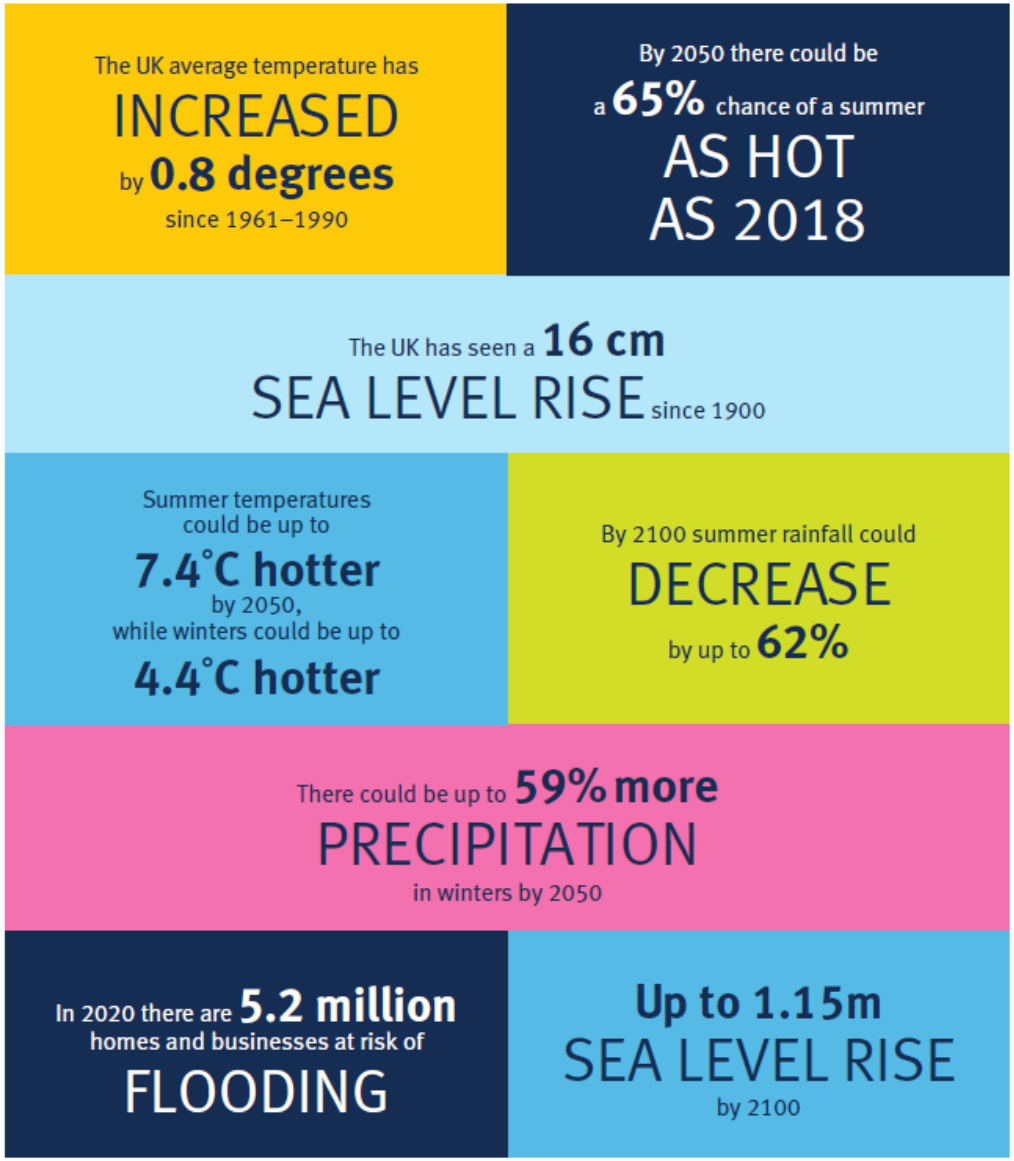
South Gloucestershire Council

Adaptation & resilience



- Climate has and will change due to historic emissions
- Preparing for the future
- National Adaptation Programme
- Impact on land use planning, buildings and infrastructure, natural capital, public health, local economy

ADEPT


The UK average temperature has
INCREASED
by 0.8 degrees
since 1961–1990
By 2050 there could be
a 65% chance of a summer
AS HOT
AS 2018
The UK has seen a 16 cm
SEA LEVEL RISE since 1900
Summer temperatures
could be up to
7.4˚C hotter
by 2050,
while winters could be up to
4.4˚C hotter
By 2100 summer rainfall could
DECREASE
by up to 62%
There could be up to 59% more
PRECIPITATION
in winters by 2050
In 2020 there are 5.2 million
homes and businesses at risk of
FLOODING
Up to 1.15m
SEA LEVEL RISE
by 2100

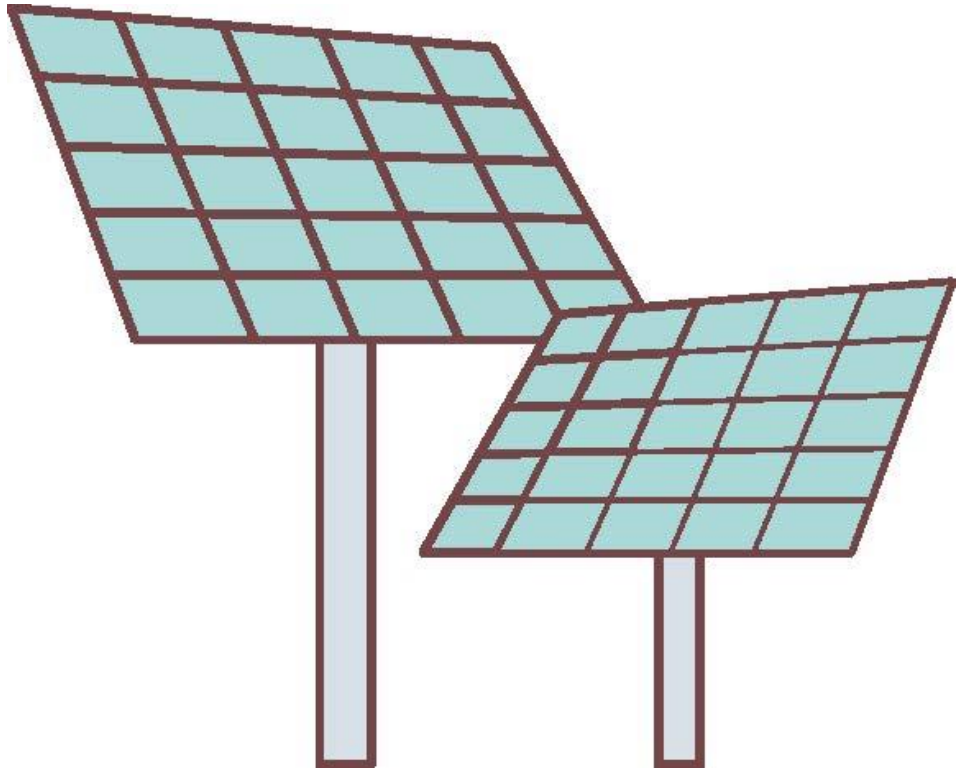
Association for Public Service Excellence

Update from APSE Energy

Charlotte Banks,
Energy Research & Project Officer,
APSE Energy

APSE Energy

- APSE Energy started in 2014, now has 114 member authorities
- Part of the APSE family and reflects the fact that energy is a topic of relevance to the whole council
- All local authorities have assets
- Many local authorities have similar issues to tackle – fuel poverty, climate change, air quality
- But do councils have the capacity to meet these aims?
- Advocacy, Knowledge, Learning, Consultancy



Climate Emergency Public Engagement Survey

- APSE Energy and the Consultation Institute joint collaboration
- Survey LAs - Autumn 2020
- 84 separate councils responded
- Research available to all APSE members
- Online version – APSE Energy webpages
- Available here
- Held an APSE Energy webinar December 2020

apse energy

The Consultation Institute

Climate Emergency Public Engagement Survey

Who are you talking to? Insights into local authority engagement with the public and wider partners

Engagement on the Climate Emergency

- Long-term engagement piece
- Continuous but changing
- Integrated into all other engagement
- Genuine two-way process. Engagement different to communication
- Make it real – "80% councils suffered climate-related incidents in last 5 years"
- Build in expertise/knowledge and ideas from public
- Range of techniques - including consultations

apse energy

The Consultation Institute

Climate Emergency Public Engagement Survey

Who are you talking to? Insights into local authority engagement with the public and wider partners

Survey Findings

- Around two-thirds of respondents had declared a Climate Emergency and almost all the others had made a similar strong public commitment
- Less than half could confirm that they had a climate engagement strategy
- A Climate Engagement Strategy needs to be an integral part of the long-term Climate Action Plan to tackle the Climate Emergency

Survey Findings - Audience

- Local authorities cited the key audiences for their public engagement work as being "as many people within the local authority area as possible" followed closely by the "residents" category
- **This is important**: Some local authorities have already suffered a backlash after using Government funds to introduce new traffic calming measures with the opposition explicitly complaining of "not having been consulted"
- Strong sense that the public like being consulted

Survey Findings - Barriers

- "Lack of national government commitment" was cited as the most significant external barrier
- This is worrying whether or not it is an accurate perception as it is demotivating to feel that national government is not committed to this agenda
- Local authorities reported the biggest internal barrier to climate engagement was the lack of budget and the financial effects of Covid-19

Survey Findings - What Councils Need

- We asked local authorities what services would most benefit their work on engaging the public on the climate emergency
- Above all, what most respondents answered as good practice examples and case studies, along with workshops and webinars to exchange good practice ideas
- Many simply are not aware of good practice examples or how to find them, reinforcing a sense of "not knowing where or how to start"

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The Consultation Institute

Climate Emergency Public Engagement Survey

Who are you talking to? Insights into local authority engagement with the public and wider partners

Survey Findings – 10 Key Things You Can Do Now on Climate Engagement

1. Make a bold public commitment to engage and consult local people on how to tackle the climate emergency
2. From the start, find ways to give local people a real say over the agenda
3. Provide good quality educational material on your website/other media and what the council is doing about it
4. Make it real – show how the climate emergency is affecting the people and community in your local area now
5. Make sure your climate emergency plan includes a long-term engagement strategy

Survey Findings – 10 Key Things You Can Do Now on Climate Engagement

6. Use positive messaging about the benefits of making the changes – a better quality of life
7. Make sure the economic recovery and tackling climate change go hand in hand
8. Work across the council and with all the others partners in your local area for collective local action
9. Use different engagement techniques such as citizens juries/ assemblies, participatory budgeting, focus groups
10. Contact APSE Energy and the Consultation Institute to see how we can help you

Innovation Competition

- APSE Energy members only
- Chance to win free consultancy – 5 days
- Closing date - 2nd February 2021
- Please send completed applications to Louise Midwood at lmidwood@apse.org.uk

APSE Energy Action Plans Database

- Collating local authority climate emergency action plans together in one database
- Allows us to run queries for key words such as ‘food’ or ‘electric fleet’
- Produces a report containing actions that various councils have included in their plans
- Can be used to help councils to pull together their plans & share ideas
- Email Louise Midwood – lmidwood@apse.org.uk

APSE Energy Events

- Webinar series
- Recent topics – climate action plans, sustainable food, skills, third party solar, heat pumps, solar and battery storage
- Most recent webinar last week – EVs
- Next webinar 10th February – Climate impacts of council decisions
- Summit 3rd & 4th March – look out for further information in the next few weeks

Contact Details

Charlotte Banks, APSE Energy

Email: cbanks@apse.org.uk

NEW MUNICIPALISM

Delivering for local people and local economies

Overview of AceOn's Virtual Power Plant:

Tackling Climate Change and Addressing Poverty

"Offering solutions today for tomorrow's world"

AceOn Group
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www.aceongroup.com

ACEON - WORKING IN PARTNERSHIP NATIONALLY & INTERNATIONALLY

AceOn have a unique combination of a wealth of public and private experience as well as in-depth knowledge of the battery storage and energy sectors. AceOn have been chosen as the national partner of both the Association of Public Service Excellence and the National Housing Federation. We work in co-operation with leading national and international manufacturers of Electric Vehicle Chargers, Domestic and Commercial Battery Storage Systems, Solar PV Panels, and Air Source Heat Pumps.

Association for Public Service Excellence -
Exclusive Approved Energy Storage Partner to **114 member councils**

National Housing Federation -
Exclusive Energy Storage Sector Supplier to **800 Housing Associations**

Microgeneration Certification Scheme (MCS) -
Helped **create and develop** the Battery Storage Standard (MIS 3012)

Solar Energy UK (formerly Solar Trade Association) -
Influential **member and partner** shaping government policy

"The Telford Company Taking on Tesla"

Working Together With:

ACEON WORKING IN PARTNERSHIP – ONE STOP SOLUTION PROVIDER

DOMESTIC BATTERY ENERGY STORAGE SYSTEMS – For New-Build & Retrofit

VIRTUAL POWER PLANT – RENEWERGY Smart Energy Management Platform: Optimisation, Aggregation and Trading

SOLAR PV PANELS - Marley SolarTile® & Viridian Solar For Re-roofing & New-Build, Futurasun PV Panels

ELECTRIC TRANSPORT – EO Smart EV Chargers: Home & Work, Electric Bike Shelters

CUSTOM BATTERY PACK DESIGN, MANUFACTURE & BATTERY DISTRIBUTION – Top brands – including our own!

COMMERCIAL & INDUSTRIAL BATTERY STORAGE – Larger Scale Container Batteries from 9kWh to 5MWh

AIR SOURCE HEAT PUMPS – Samsung Heat Pump, Controls & ClimateHub Integrated systems

ELECTRIC PANEL HEATERS – Slimline Electric Panel Heaters, Towel Rails and Radiators with Smart controls

RENEWABLE ENERGY INFRASTRUCTURE – Working with Gridserve on Solar farms, Electric Vehicle Forecourts/Hubs

INTRODUCING OUR VIRTUAL POWER PLANT (VPP)

TACKLING CLIMATE CHANGE AND ADDRESSING POVERTY

Renewergy®

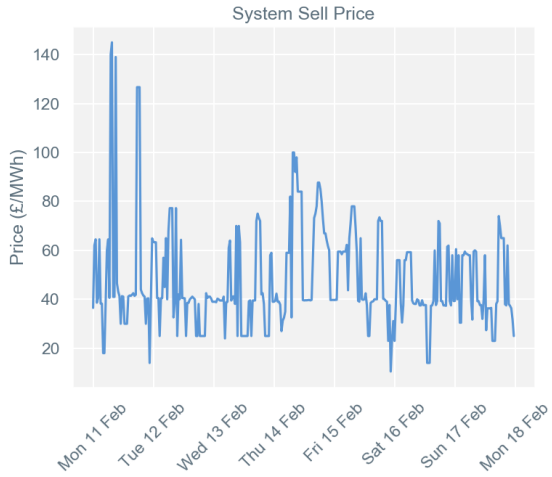
THE HOME RENEWABLE ENERGY GENERATION PARTNERSHIP

ENERGY – GENERATE & SAVE ***MONEY – SAVE & GENERATE*** ***PLANET – SAVE & REGENERATE!***

OUR RENEWERGY VPP PLATFORM: 4 SMALL STEPS, 1 GIANT LEAP FORWARD!

Our Virtual Power Plant (VPP) called RENEWERGY® is a network of houses and flats, each operating as a micro-energy generation centre through the installation of Solar Panels and Energy Storage batteries that are virtually connected together through our pioneering Smart Energy Management Platform.

As a VPP, we manage that energy smartly and proactively to predict demand and supply, meeting the needs of the householder and enabling spare energy capacity to be aggregated together and traded with the Grid. Our Platform can take advantage of variations in the Balancing System Price to determine whether there is a financially advantageous opportunity to charge or discharge the batteries. This can save or generate extra money, whilst also reducing CO2 emissions through optimising the use of solar generation to minimise the amount of energy imported to site.



Effortlessly connect a home energy storage system to our RENEWERGY Platform and we can do the rest…

1. CONNECT

The Platform connects easily via API to battery storage, PV panels, electric heating and EV chargers. Once connected **the consumer and owner is able to monitor the performance of their assets tracking generation, consumption and savings.**

2. LEARN

Once connected, **we learn the consumption and generation pattern for the site**. This includes the usage patterns of the electric heating and EV charger.

3. OPTIMISE

Our advanced algorithm forecasts consumption and generation using weather data. Each asset connected to the platform is then scheduled to operate **to minimise energy import into the site maximising savings and carbon reduction.**

4. MONETISE

The RENEWERGY Platform learns when there is spare capacity in each system**. The spare capacity across the RENEWERGY Platform is then traded with the National Grid, and Local Distribution Operators. We share this revenue with our partners.**

VIRTUALLY CONNECTING HOMES TOGETHER TO MAXIMISE THE SUSTAINABLE BENEFITS

- The price of electricity has increased by 7% pa since 2005.
- For a home today using 3,500 kWh pa, this equates to c.£694/yr.
- Following a 7% pa increase, bills would rise to £1,192 in 2030.
- Government Energy White Paper predicts **electricity demand could as much as double** by 2050 = high demand & growing!
- Our VPP helps to insulate tenants from the full extent of these increases AND creates a Revenue stream from the capital investment for the Landlord

Renewergy

THE HOME RENEWABLE ENERGY GENERATION PARTNERSHIP

NB. Requires Internet or 3G Connectivity. Lead-in time approx 8 weeks

- **ECONOMICALLY**: Grid Services could **deliver gross income Year 1 of c.£250.** We anticipate increasing this as prices increase.
- 100 homes in the VPP could fund over **14,000 hours of home care** or **create 28 apprenticeships** over 10 years.

- **SOCIALLY**: RENEWERGY aims to reduce a tenant's electricity bill by up to 70% - reducing the cost of living**, tackling fuel poverty** and **enabling affordable warmth, better mental health** and helping to **lift households out of poverty** in the long-term by creating a more resilient household budget.

- **FINANCIALLY**: Our RENEWERGY VPP enables tenants to use more of the electricity generated by the solar PV so they can **save more money.**
- A specific Service Charge or Rental Top up provides a **secondary revenue stream <u>option</u>** for the landlord to consider.

- **ENVIRONMENTALLY**: By **maximising renewable energy usage** the carbon footprint of each individual household is reduced by on average 70%.

OUR ENERGY STORAGE SYSTEMS – NOT ALL BATTERIES & INVERTERS ARE THE SAME!

Best in class Energy Storage products:

- Our BMZ ESS 9.0 is a modular lithium-ion based energy storage system - **5000 cycles** with 80% Depth of Discharge to extend battery life.
- **VFM** - one of the **lowest cost** ESS based on Cost per warranted kWh throughput – 9p per kWh
- Up to **10 year warranty** for battery and inverter, **20 year** service life on the battery
- Battery **manufactured in Germany** with top battery engineers
- **Flexibility** - our smaller 4.2kWh battery is available when there are possible size constraints. This battery can sit alongside an Inverter on the wall.
- **All in one Hybrid** solar PV & battery charger inverter, reducing installation time. **Smart connectivity and two-way communication** for VPP delivery coming soon.

UK-Based Service Centre:

- Dedicated **UK-based** service, technical support, training and distribution centre providing a **one stop shop** for your energy storage needs.
- **Free recycling** of battery at end of life & disposed in correct manner

High Level of Safety – We Know that SAFETY in the Home MATTERS:

- **Double steel box** to contain catastrophic failure in the unlikely event
- **Only ESS system to have a pyrofuse for secondary safety** if relays fail

KEY BENEFITS OF THE RENEWERGY VIRTUAL POWER PLANT

- **Increasing Energy Independence** – adding Battery Storage enables a Tenant to utilise directly much more of the energy generated from the roof, reducing the amount of energy exported to the Grid. Solar PV alone usually enables around 30% of energy to be used directly. Adding a Battery can increase this to c.50%. Connecting the Battery with our VPP Platform's Smart optimisation algorithms, could increase this to 70% + - which saves them more money every month and every year.
- **Tackling Fuel Poverty** – a typical annual saving on a Tenant's electricity could be over £350, rising to £581 in 2030.
- **Helping to Lift Households out of Long-Term Poverty** - Solar PV Plus Battery maximises the Tenant's savings on their Electricity Bill. Electricity prices are projected to rise by 5 – 7% every year and the battery storage therefore provides the greatest certainty and minimisation of Bill increases in a volatile future electricity market.
- **The VPP Can Create a 'Green Dividend' for a Council/Housing Association** – working the battery smarter and harder through the Grid Services we will deliver through our VPP can create a revenue stream from the capital monies invested. We can't guarantee the level of this income stream but we aim for c.£250 pa in Year 1. A Council/ Housing Association also has a choice to introduce an additional rental service charge for tenants, reflecting the significant savings that the investment has enabled the tenant to make. Without the Battery, these income streams cannot be realised.

- Delivering on **local and national Net Zero Carbon**, Climate Emergency and Future Home Standards targets.

…Even More BENEFITS OF RENEWERGY VPP

- **Reassurance & Security** – our VPP enables the lights to stay on for your Tenants if there is a Grid power cut and in the background our system can remotely monitor usage in the home for more vulnerable Tenants (subject to GDPR) and raise an alert with a Council/Housing Association if energy usage noticeably drops over 2-3 days.
- A **future-proofed model** – can be upgraded to integrate with EV Charging and Heat pumps within our VPP.
- **Highest Level of Safety** – We know that your residents, your homes and your reputation matters! We believe that the BMZ Battery that we supply is the safest in the market. Not all batteries are the same.
- **Jobs & Training** – creates an opportunity to upskill your workforce and/or create and support local jobs.
- **One stop UK shop** for customer support and servicing.
- End of life battery **recycling** by AceOn.
- Supporting the demands of the **Energy network** and the need/demand for more ‘green’ electricity.
- The more homes that we can include within the RENEWERGY Partnership, **the more EVERYONE CAN SAVE AND EARN.**

RENEWERGY WORKING IN PARTNERSHIP – FOR ALL HOUSING TYPES

RENEWERGY can be delivered in partnership with a Council, Arms-length Council company, Housing Association, Private Home Owner or Private Landlord.

RENEWERGY can be delivered as an integrated package in new-build homes for rent or purchase – AND retro-fitted into existing homes.

If you're also planning a major re-roofing programme on your social housing, it's the perfect time to consider RENEWERGY.

RENEWERGY can work for you and…

- **Your Social Housing Tenants**
- **Your Private Rent Tenants**
- **Your Employees as a Salary Sacrifice Scheme**

"Consumers can be rewarded for playing a bigger role in our energy system. There are plenty of ways to save money, from…making the most of new technologies, such as batteries…Consumers can also generate their own electricity through roof-top solar panels, store it in batteries and even sell any excess power back to the grid to generate a profit…"

– Government Energy White Paper: December 2020

There are different operating and funding models for different types and forms of housing – **we are happy to talk to you about these.**

AceOn

AceOnGroup.com

Renewable Energy + Battery Specialists

Renewergy

The Home Renewable Energy Generation Partnership

"Offering solutions today for tomorrow's world"

THANK YOU FOR YOUR TIME

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LONDON BOROUGH OF HOUNSLOW ENERGY FRAMEWORK AGREEMENT

www.hounslow.gov.uk/hounslowepc

APSE SOUTHERN REGION RENEWABLES & ENERGY EFFICIENCY ADVISORY GROUP. 26TH OF JANUARY 2021

BACKGROUND

Under the Energy performance of Buildings (England and Wales) Regulations 2012 and the Building Regulations 2013, Energy Performance Certificates (EPC), Display Energy Certificates (DEC) and Stock Condition Surveys (SCS) are required, either by law or under contractual agreements, to maintain their properties to a minimum standard.

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RATIONALE

EPC MANDATORY 2023

ONE STOP SHOP FOR WORKS AND CERTIFICATION'S

ALIGNED TO CLIMATE EMERGENCY ACTION PLAN OF NET ZERO CARBON TARGET

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ARE YOUR PROPERTIES PORTFOLIO CERTIFICATES UP TO DATE?

What are you doing to bring your properties EPC from "G" rating to "E" or at best "A" rating?

Do all your buildings over 250 square meters total floor area have a DEC?

How long does a display energy certificate last where the total useful floor area is more than 1000 square meters?

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FRAMEWORK AGREEMENT LOTS

LOT 1	Energy Performance Certificates Framework for non-domestic EPCs
LOT 2	Energy Performance Certificates Framework for domestic EPCs
LOT 3	Display Energy Certificates Framework (DEC)
LOT 4	Stock Condition Surveys Framework (SCS's)

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BENEFITS OF THE FRAMEWORK AGREEMENT

- **Quick and easy to use**
- **OJEU Compliant**
- **Legal requirements**
- **Numerous Suppliers**
- **Response Time**
- **Peace of mind**

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FRAMEWORK AGREEMENT SERVICES AND SERVICE PROVIDERS

- Certification of works such as EPC and DEC
- Energy Audits - Carbon Profiling
- Improvement of works - M.E.E.S Compliance

- SERVICE PROVIDER WORKS:
- Solar PV
- LED
- Boilers controls
- Air Handling Units upgrade (AHU)
- Heat Pumps such as ASHP and GSHP
- Storage batteries
- Associated works etc

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HOW TO USE THE FRAMEWORK AGREEMENT

- **TWO STAGES**

- **Stage one**: Function of the customer.
- Fill the **Access and Order form online from:** www.hounslow.gov.uk/hounslowepc

- **Stage two**: LBH Energy Officer email to customer.
- **Call -Off Terms and Conditions**
- **Completion of Works Form**
- **Service Providers:- Direct award or mini-competition**

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Process Chart

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LET'S MAKE IT WORK

QUESTION TIME

THANK YOU FOR LISTENING

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Galileo Master Certificate

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www.hounslow.gov.uk/hounslowepc

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