6 Utilities

6.1 Ambitions

Strategic investment in utilities is essential to support the region's targets for longer- term housing development and jobs growth. Much of the East of England's utilities infrastructure is at, or nearing, capacity and there is an urgent need to deliver a coherent response to future capital investment. The way in which this infrastructure is planned for will impact significantly on the region's low carbon ambitions and environmental targets. This is both directly through the employment of renewable energy technologies and approach to water and waste, but also through the innovative application of information and communications technologies (ICT) to encourage more efficient behaviour. Finally, by supporting innovation in this area, there are opportunities to positively affect the region's ambitions for gross value added (GVA) growth and employment.

The ambition of the region is therefore to ensure the necessary infrastructure to deliver growth, whilst at the same time improving resource efficiency across the energy, water and waste sectors and maximising the economic opportunities from key infrastructure growth sectors. Investing in utilities infrastructure and improving our resource efficiency will directly impact on the following specific regional targets and outcomes:

Energy:

- by 2010, 14 per cent of the region's electricity supply should come from renewable sources
- by 2020, 44 per cent of the region's electricity should come from renewable sources[1]
- 10 per cent of the supply of energy for developments of more than 1000 sqm of non residential floorspace, or more than 10 residential dwellings, should be from decentralised, renewable and low carbon energy sources.

Water:

- reduce the average per capita consumption of water used in all homes to no more than 120 litres per head per day (This target equates to savings in water use of at least 25 per cent in new development and 8 per cent in existing development, compared with 2006 levels).

ICT:

- a digital infrastructure which ranks highly among leading international regions with widespread access to the latest digital infrastructure for businesses and households
- reduction in overall travel through use of ICT.

Waste:

- eliminate the landfilling of untreated municipal and commercial waste by 2021
- by 2021, increase to 98 per cent the proportion of waste arisings processed through an initial recycling or recovery stage
- reduce the annual tonnages of waste imported into the region from London from 1.6 million tonnes in 2010/11 to 0.8 million tonnes by 2015/16
- waste arisings per £ million GVA in 2031 that are 37 per cent (143 tonnes) below 2005 levels.

This theme is also important in the region delivering against a number of national policies including Digital Britain (2009), New Industry, New Jobs (2009), EU Landfill Directive, the Low Carbon Industrial Strategy (2009) and Low Carbon Transition Plan (2009).

1 The Renewable energy targets for 2010 and 2020 have been amended from 'energy' to 'electricity'. This is due to changes in the definition of 'energy' in relation to government policy, where it is clear from the regional spatial strategy (RSS) evidence base that these targets are electricity only.

6.2 Status

Given the levels of growth that are planned for the East of England, there are real challenges in ensuring that the region is able to both support new housing and jobs, and to take a lead in the areas of resource efficiency and renewable energy generation. Infrastructure deficiencies are already impacting on our capacity to deliver new development and business growth.

The East of England is already a major generator and supplier of energy. It supplies half the UK's domestic gas requirements, generates nuclear energy and is the leading region for renewable generating capacity and potential. The scale of growth planned for the region means that the supply of energy will need to increase, both overall and in specific localities where there are already constraints. In particular, the supply of renewables will need to increase rapidly to achieve the CO_2 emissions targets and the target of 44 per cent of the region's electricity to come from renewable sources by 2020.

The East of England is the country's driest region and has high levels of water consumption, yet it has a valuable water environment, which is a key feature contributing to a high quality of life in the region. Much of the region's local water resources are fully developed and in some cases over-committed. Work undertaken by the Environment Agency has identified a number of locations where the region will move into water deficit as a result of proposed growth. Meeting the future demand for water and wastewater services will require a 'twin-track' approach that combines infrastructure enhancement and more efficient use of water by all users.

Basic broadband coverage in the region appears to be relatively comprehensive. However, in terms of download speeds, the East of England is amongst the poorest performing in the UK and there is the prospect of a new, and more persistent, digital divide opening up in terms of access to next generation broadband services.

The East of England has, jointly with the East Midlands, achieved the highest regional waste recycling rate in the UK and has the second lowest arisings of household waste. While waste arisings per head may be stable, there is now a real challenge to maintain and improve this, given the level of growth planned in the region. This will require an approach that addresses both municipal and commercial waste.

6.3 Programmes

The following programmes have been identified as key to delivering the ambitions for this theme.

	Programmes	Programme components
1	**Developing low carbon energy sectors**	(1a) Regional low carbon electricity
		(1b) Regional low carbon heat
		(1c) Regional low carbon transport fuels
		(1d) Community energy solutions – Anglian GOwarm Fuel Poverty Programme
2	**Delivering required water and waste water infrastructure**	(2a) Delivery and monitoring of water infrastructure investment
		(2b) Evidence and future planning for water infrastructure
3	**Achieving better water efficiency**	(3a) Monitoring of water use in new development
		(3b) Water efficiency guidance
		(3c) Winter storage and rainwater harvesting

	Programmes	Programme components
4	**Upgrading regional broadband speed and access**	(4a) Eastern Regional Broadband Uplift Scheme (EREBUS)
		(4b) East of England Broadband Co-operative
		(4c) Local broadband projects
5	**Providing required waste infrastructure**	(5a) Intermediate waste infrastructure provision
		(5b) Development of waste recovery and disposal infrastructure
		(5c) Skills in waste management and planning

Programme 1: Developing low carbon energy sectors to facilitate sustainable economic growth

Description and strategic fit

The supply of renewables in the East of England will need to increase rapidly to achieve the CO_2 emissions targets and, more specifically, if the target for renewable electricity to 2020 is to be achieved.

New Industry, New Jobs, published by government in May 2009 highlights a number of market failures associated with low carbon investment, such as the inability to capture the full benefits of investment in innovation and system failures such as barriers to collaboration. The East of England needs to adopt a pragmatic approach to identifying solutions to these problems. For the East of England the key sectors include offshore wind, marine energy, nuclear power, carbon capture and storage, low carbon construction and ultra-low carbon vehicles, and specialist financial and business services.

The UK Low Carbon Transition Plan and associated strategies published in July 2009 highlight the significant impacts and also major opportunities in moving toward a low carbon economy.

This programme will make a major contribution to the region's carbon reduction of 60 per cent by 2031 and renewable electricity generation targets, which will set the region on a path to achieve new national targets of 80 per cent greenhouse gas reduction by 2050. It primarily supports Policy ENG2 (Renewable Energy Targets) of the regional spatial strategy (RSS) and the Resource Efficiency goal in the regional economic strategy (RES).

It is important that this programme is closely aligned with the regional waste infrastructure programme.

Implementation

Leadership

The programme delivery will be led by the East of England Development Agency (EEDA), and in part by funded activities of regional delivery bodies eg Renewables East, the East of England Energy Group (EEGR), and also through local authority partners via Local Development Frameworks. This role may possibly be taken up by the Low Carbon Leadership Council at a later date.

Monitoring

Working in partnership for the Department of Energy and Climate Change (DECC) on emissions data and energy generation statistics, the East of England Local Government Association (EELGA), NHS East of England, EEDA and its funded delivery bodies will be required to compile monitoring and performance data.

Resources

The region does not have specific regional funding allocations targeted at investing in regional low carbon energy measures. At present, limited funding is made available through DECC, EEDA and some local authorities for specific project activity. Additional funding is directed towards low carbon energy from the private sector, European funding and other sources. The region does not have specific regional funding allocations targeted at investing in low carbon community energy. This limited investment will not be enough to fund all the measures required under this programme.

Programme components

1a Regional low carbon electricity

Low carbon electricity generation will play a key role in delivering carbon emission reduction targets and renewable energy generation targets for the region. The following activities need to be developed and delivered:

- **improved access to the electricity transmission and distribution networks, by working with the Office of Gas and Electricity market (Ofgem) and the private sector**
- **working with key private sector partners in the development of strong supply chains for generation plant, components and associated goods and services eg offshore wind, carbon capture and storage and new nuclear build**
- **supporting new and existing centres of expertise in low carbon technology research**
- **continuing drive to encourage low carbon and renewable energy developments eg wind and biomass, working with the Regional Planning Body, LAs and project developers.**

Key Delivery Agents	Budget	Results
Industry support organisations such as Renewables East and EEEGR. Support programmes such as the Manufacturing Advisory Service and enterprise hubs such as Hethel Engineering Centre and OrbisEnergy, local authorities in encouraging low carbon development.	There are currently limited public budgets to support this activity. Delivery will only be funded by partnership working and investment, leveraging public, private and EU funding wherever possible. The scale of investment required to support this programme needs further consideration.	**Outputs:** • by 2010, 14 per cent of the region's electricity supply should come from renewable sources (10 per cent, excluding offshore wind) • by 2020, 44 per cent of the region's electricity should come from renewable sources (20 per cent excluding offshore wind) • ten per cent of the supply of energy for developments of more than 1000 sq m of non-residential floorspace, or more than 10 residential dwellings, should be from decentralised, renewable and low carbon energy sources. **Outcomes:** • increased GVA

1a Regional low carbon electricity		
		• reduced CO_2 emissions • enhanced capacity of the region's renewables sector and supply chain.

1b Regional low carbon heat		
Low carbon heat generation is a relatively new policy priority. To enable the targets to be met, the following activities need to be developed and delivered: • **support for the development of district heating infrastructure and high proportion of renewables in new settlements** • **work with National Grid/Ofgem to support introduction of biogas into the national gas distribution network** • **mapping of regional and sub-regional biomass supply chains, identifying organic waste material that could used as a biomass feedstock** • **work with local waste authorities to divert biodegradable municipal waste from landfill** • **identification of opportunities for advanced energy from waste facilities, eg pyrolysis and advanced gasification)** • **continued support for Woodfuels East as the regional woodfuel supply chain programme.**		
Key Delivery Agents	**Budget**	**Results**
Industry support organisations such as; Renewables East, EEEGR, Woodfuels East and also planning bodies. The support of National Grid and Ofgem in relation to the national network is also essential.	There are currently limited public budgets to support this activity. Delivery will only be funded by partnership working and investment, leveraging public, private and EU funding wherever possible. The scale of investment required to support this programme needs further consideration.	**Outputs:** • by 2020, 10 per cent of the region's heat consumption should come from renewable sources. This target forms an integral part of the 15 per cent primary energy target. **Outcomes:** • increased GVA • reduced CO_2 emissions

1c Regional low carbon transport fuels
The region currently accounts for around 12 per cent of national transport fuel consumption (third highest in UK). Given growth in demand, the carbon intensity of existing fuels and the uncertain global security of supply, there needs to be more encouragement of sustainable, low carbon transport fuels. The following activities need to be developed and delivered: • **work with key ports and logistics operators to promote the region as a centre for handling imports/exports of sustainable fuels** • **support research into advanced biofuels at regional universities and research institutes;** • **work with the agricultural sector, research partners and businesses to implement demonstration projects in biofuel feedstock production.**

1c Regional low carbon transport fuels		
Key Delivery Agents	**Budget**	**Results**
Industry support organisations such as Renewables East, EEEGR, and also planning bodies eg local authorities in support of infrastructure-led developments. Research and Higher Education institutes will also play a key role in supporting research and development (R&D) in advanced transport fuels.	There are currently limited public budgets to support this activity. The scale of investment required to support this programme needs further consideration, and may come from a variety of sources including: future regional funding allocations, the private sector, local authorities, European Funding, Highways Agency and the DfT Transport Innovation Fund (or equivalent).	**Outputs:** • by 2020, between 5 and 10 per cent of the region's transport fuels should come from renewable sources. This target forms an integral part of the 15 per cent primary energy target. **Outcomes:** • increased GVA • reduced CO_2 emissions • sustainable transport outcomes.

1d Community energy solutions – Anglian GOwarm Fuel Poverty Programme		
The East of England has the second highest number of communities off the gas distribution network, with a good proportion in fuel poverty. This programme seeks to address the twin challenges of alleviating fuel poverty and improving social inequalities, whilst also driving increased use of renewable energy technologies in domestic properties: • **deliver a pilot fuel poverty programme utilising Low Carbon Building Programme funding to stimulate commercial markets in Air Source Heat pumps** • **regional campaign to encourage domestic take-up of renewable electricity, heat and transport fuels; 'green makeovers'** • **deliver a retrofit programme for existing homes, which could stimulate job creation from declining building and construction sectors.**		
Key Delivery Agents	**Budget**	**Results**
Anglian GO Warm, working in partnership with key regional organisations such as the strategic health authority, local authorities, DECC and EEDA.	Between 09/10 and 2010/11, the programme will raise £5 million from public and private sources. Future delivery will only be funded by partnership working and investment, leveraging public, private and EU funding wherever possible.	**Outputs:** • by Dec 2009, establish GO Warm as the primary delivery vehicle • by 2011 deliver 500 domestic renewable energy installations. **Outcomes:** • increased GVA

1d Community energy solutions – Anglian GOwarm Fuel Poverty Programme		
	The scale of investment required to support this programme longer term (beyond 2011) needs further consideration.	• reduced CO_2 emissions • greater community involvement in energy and carbon related issues particularly addressing issues of fuel poverty, greater fuel efficiency and use of renewables.

Programme 2: Delivering required water and waste water infrastructure

Description and strategic fit

Timely delivery of water and wastewater infrastructure is critical to ensure that water availability and quality are not a constraint to growth. Achieving the aims of this programme will also improve the quality of the region's water bodies and help meet the requirements of the Water Framework Directive by delivering actions set out in the River Basin Management Plans.

This programme is focussed on supporting the appropriate investment in water infrastructure in the East of England through the region's water companies. A clear case needs to be made for investment to accommodate planned growth in the region and to secure funding through water company charges, which are regulated by the Office of Water Services (Ofwat). If the right infrastructure cannot be provided in a timely manner, it will act as a brake to development and will compromise the ambitions of both the RES and RSS for growth. A regionally significant example is the need to further resolve the capacity issues of the Rye Meads waste water treatment works in East Hertfordshire (fundamental to the delivery of the housing growth allocations at Harlow and Stevenage for example) beyond the level of growth currently allocated in the adopted RSS.

The programme is central to the delivery of the headline growth targets for housing and economic growth, whilst at the same time protecting the important environmental assets that the East of England boasts. Appropriate investment in new infrastructure will also contribute directly to the government's and region's ambitions to reduce per capita consumption of water through more effective and efficient systems and consequently reduce CO_2 emissions. The programme primarily supports WAT2 (Water infrastructure) and WAT3 (Integrated Water Management) of the RSS and plays a role in furthering the aims of the Resource efficiency goal in the RES. The Environment Agency's national water strategy 'Water for People and the Environment' and the Regional Action Plan will also be supported.

Implementation

Leadership

Water companies, regulators, planners, developers and government need to work closely together to ensure the long-term provision of sustainable water and wastewater services. Responsibility for providing water and wastewater services, and management of water and wastewater infrastructure and assets, rests with the water companies. It is the Environment Agency's role to ensure the sustainable management of water resources and to protect water quality by granting permits to abstract and discharge water. It also has a role to provide and review evidence and in monitoring (see below).

Meeting future demands for water will require a twin-track approach combining programmes reducing demand and the planning and timely development of new water supplies and wastewater infrastructure. This programme therefore needs to be considered alongside the regional water efficiency programme as part of this approach, but also with the approach to regional flood risk as set out under green infrastructure.

Monitoring

Part of the Environment Agency's role is to review water company plans and provide advice to Department for Environment, Food and Rural Affairs (Defra). It also contributes to assessing the impact of regional growth. It will take the lead role in monitoring the delivery of the programme components, possibly through the Regional Water Partnership which includes the water companies.

Resources

Programmes identified in water company business plans are funded through water company charges, which are regulated by Ofwat. However, not all infrastructure will be delivered in this way and a number of funding sources will need to be brought together, in particular, infrastructure provision by developers, or financial contributions and growth funding.

Current resources being sought by the region's water companies for 2010-2015 are set out in their final business plans. It is estimated that total investment being proposed by water companies in PR09 within the East of England is in excess of £500 million.

Proposals include for Water resources - increased water meter installation; enhanced water efficiency programmes; and resource development including raising Abberton reservoir in Essex and for Wastewater (Anglian Water Services only) - additional treatment works capacity; strategic network reinforcements; and requisitions and adoptions of several hundred km of sewers.

Programme components

2a Delivery and monitoring of water infrastructure investment		
The Periodic Review 2009 (PR09) is the process by which Ofwat determines what the water companies can charge their customers and what they are expected to deliver in terms of infrastructure and environmental improvements. PR09 covers the period April 2010 to March 2015. Ofwat have approved a long term approach for up-front investment in infrastructure if it is part of the most cost-effective solution, making use of the new 'long-term, least cost planning' methodology. The ongoing management of the relationship between infrastructure planning and growth is key. It is essential to manage, monitor and learn from the implementation of the PR09 water company business plans.		
Key Delivery Agents	**Budget**	**Results**
Ofwat, as the regulator will decide on the investment plans and the level of charging. Water Companies have responsibility for the delivery of their business plans with the development industry. The Water Partnership brings together the main partners in the region around water and should be the main body for monitoring and learning from the implementation of the plans with the Environment	Current planned water company investment in PR09 to accommodate growth is estimated be in excess of £500 million in the region.	**Outputs:** • Ofwat has made its final determination for PR09 (November 2009) and this will support investment for the period 2010-2015 • 2010-2015 – Water companies will produce Annual Reviews updating on progress on actions in their business plans • implement actions set out in River Basin Management Plans. **Outcomes:**

2a Delivery and monitoring of water infrastructure investment		
Agency. Local authorities will play a key role through the planning process.		• continued links between water investment and growth, including evidence to support upfront investment. • positive impacts on environmental targets and continued improvement in ecological status of water bodies • positive learning for the next round of water company business plans.

2b Evidence and future planning for water infrastructure		
Provision of evidence to support investment in infrastructure at the next periodic review (PR14). A draft version will be needed by 2013. Water company business plans and water resource management plans, water cycle studies and River Basin Management Plans are all essential to effectively planning for future infrastructure needs. These plans provide the evidence base to secure funding via the Periodic Review process. To prepare evidence to support and challenge these plans, a view is also required on the actions needed to meet demand for water in the long term. Infrastructure modelling linked to growth forecasts carried out by the Environment Agency will help to achieve this.		
Key Delivery Agents	**Budget**	**Results**
A partnership approach with the water companies, Ofwat, the Environment Agency and local authorities is essential in developing an effective evidence base. The regional Water Partnership Group might be the best way of achieving this.	See above. A similar level of investment is likely to be needed at PR14.	**Outputs:** • 2010-2013 Draft regional evidence complete to inform next Period Review water companies produce draft business plans and water company resource management plans in 2013 and final plans in 2014. **Outcomes:** • a long-term approach to water planning in partnership with water companies and the Environment Agency • continued investment in water infrastructure to meet the region's growth aspirations • stronger partnership approach to water and waste water infrastructure investment.

Programme 3: Achieving better water efficiency

Description and strategic fit

The East of England has one of the highest levels of water use per capita in England and Wales and is a seriously water stressed region with significant plans for growth. Forecast housing growth and the impact of climate change will increase demand for water. Actions set out in the region's water companies' water resource management plans will help. However, there is a need to do more.

This programme forms part of a twin track approach to water in the Implementation Plan. Whilst the delivery of infrastructure to accommodate growth, as set out in the RES and the RSS is picked up under programme 2, this programme seeks to address the other half of the equation in terms of improving water efficiency. This programme needs to be considered alongside the approach to regional flood risk as set out under the green infrastructure theme.

The programme seeks to achieve the following outcomes:

- to ensure that water availability is not a constraint to growth, and that river and habitat quality continue to improve
- average water used by existing homes and businesses decreases, average per capita consumption declines and resources are freed up to mitigate the impact of new development and the impact of climate change
- greater awareness of the need to use water wisely and the better appreciation of the link between reducing water use and reducing carbon emissions.

This programme supports Policy WAT1 (Water efficiency) of the RSS and is the primary mechanism for meeting the RES's target for reducing water consumption. It will also support the priorities of the Environment Agency in the region and the water companies' water resource management plans, and contribute directly to the government's ambition to reduce average per capita water usage to 130 litres per head per day by 2030.

Reducing water use also has benefits linked to reducing energy use and carbon dioxide emissions, both in terms of the energy used to supply and treat water and also in terms of the energy used to heat water in the home and by businesses and as such will contribute to the region's CO_2 reduction target.

Implementation

Leadership

This programme will be led by the Regional Water Partnership Group and informed by work undertaken by the Anglian Region Water Efficiency Group. However, the water companies will have a key role in delivery through long-term water company water resource management plans.

Increased water efficiency in new developments is also a key component of the programme and will be informed by water cycle studies, growth modelling studies and by provision of design and planning guidance developed by Waterwise East.

Finally, whilst this programme contains guidance for water efficiency in new builds, existing housing also needs to be considered. The housing theme includes a regional retrofit programme, which will include water efficiency improvements and needs to also be considered as part of the overall approach.

Monitoring

The Environment Agency is funded to ensure the long-term sustainable use of water resources and to review water company plans and contribute to regional growth studies. In addition, Waterwise East should monitor the impacts of the water efficiency in new development.

Resources

Programmes identified in water company business plans are funded through water company charges, which are regulated by Ofwat. Agriculture programmes include funding from the Environment Agency with other partners at Cranfield, Defra, Warwick University and central government. Finally, the approach includes the possibility of using Homes and Communities Agency (HCA) funds available for various housing programmes including energy efficiency.

Programme components

3a Monitoring of water use in new development		
Water company led demand management programmes are about to be approved by Ofwat – these include the installation of water efficient devices in homes and businesses, water audits, education, targeted leakage control and water metering. There is a need to monitor the implementation of the measures and the effects that these have on the demand for water and to measure progress towards achieving the government's aim of reducing average water use to 130 litres per person per day by 2030. A partnership approach is needed to set up a project to monitor water use in new builds.		
Key Delivery Agents	**Budget**	**Results**
Delivery of investment to this programme will either come through the water companies or through the development industry. The Environment Agency will undertake the main monitoring overall water use across the region. A monitoring framework has been proposed utilising information in the water companies' annual June Return to Ofwat.	Current planned water company investment in PR09 to accommodate growth is estimated be in excess of £500 million for the region. Some local budget for agriculture schemes as identified above.	**Outputs:** • now to 2010 approval of current water company business plans and water resource management plans • Jan 2010 – 2015 delivery of water company programmes • Jan 2010 -2015 effective regional monitoring of water use in the region • Jan 2010 -2015 annual report on water usage in existing property and new build. **Outcomes:** • improved water efficiency • reductions in the average use of water • greater water metering coverage • better regional understanding of water efficiency.

3b Water efficiency guidance		
Current levels of demand need to be reduced to achieve the RES target for per capita consumption. Increased water efficiency in new and existing developments is essential to help reduce household demand. Design and planning guidance has been developed by Waterwise East to help support this aim. There is now a need to promote this more widely and also to review and update the guidance. This will be informed by water cycle and growth modelling studies.		
Key Delivery Agents	**Budget**	**Results**

3b Water efficiency guidance		
Waterwise East has produced the current guidance and would therefore take responsibility for promoting it in conjunction with local authorities. The next iteration of the guidance should include involvement from the private sector, HCA, Defra through the Regional Water Partnership.	No specific funding identified however, a range of funding pots could achieve this relatively low cost intervention. Central government eg HCA funds available for various housing programmes including energy efficiency. Water charges.	**Outputs:** • 2009-2010 – promotion of current water efficiency guidance • 2010 – preparation and promotion of revised guidance. **Outcomes:** • increased water efficiency in new and existing development.

3c Winter storage and rainwater harvesting		
In the East of England agriculture utilises around 5 per cent of all water abstracted. This is considerably higher than the average across England and Wales of only 1 per cent and often takes place at ties when there is already considerable strain on water resources. This programme seeks to focus funding for winter storage reservoirs and greater use of rainwater harvesting to help farmers and growers to reduce their water use, or at least get greater productivity from the water they currently use.		
Key Delivery Agents	**Budget**	**Results**
Environment Agency will take the lead role. Water Partnership Group to facilitate a joint approach with the agricultural and horticultural community. Ultimately, however, delivery will come from the farming community and therefore the involvement of the National Farmers Union and Country Land and Business Association is essential. Opportunities to link this with the work of Cranfield University and the UK Irrigation Association.	Agriculture programmes - approximately £60,000 with £15,000 funded from Environment Agency. Other partners are Cranfield University, Defra and Warwick University.	**Outputs:** • 2009/2010 promotion of current guidance • 2010 - Development of further targeted water efficiency information for agriculture sector, establish mechanisms for funding local water efficiency schemes. **Outcomes:** • increased water efficiency in agriculture.

Programme 4: Upgrading regional broadband speed and access

Description and strategic fit

In meeting the needs of a growing population and the high-level targets for GVA growth and job creation, effective access to a quality ICT network is essential. Broadband coverage in the region is relatively good; however, in terms of download speeds the East of England is amongst the lowest performing in the UK.

There is an emerging digital divide with perhaps 40-50 per cent of the region's population unable to access next generation services. Next Generation Access (NGA) to higher speed broadband is essential for the region's competitiveness and to ensure e-inclusion.

Without intervention, rural and more sparsely populated areas are unlikely to benefit from NGA. The likely focus of private sector investment will be areas of higher population density. The programme therefore focusses on the following components:

- co-ordinating regional activity and sharing best practice (Digital Partnership East)
- creation and/or demonstration of demand (Eastern Region Broadband Uplift Scheme (EREBUS))
- support for excluded communities wishing to take local action (East of England Broadband Co-operative)
- backhaul and middle mile initiatives in areas of market failure (Supporting Open Next Generation Broadband in Rural Areas (SONGBIRD))
- promotion of broadband provision through planning legislation.

A positive relationship between ICT and productivity is supported by the BMG survey and this programme will directly support RES GVA targets and the Digital Economy goal of the RES. The programme will also contribute to the Rural Economy objectives of the RES and the CO_2 reduction targets through reducing the need to travel.

As explained in the Digital Britain Report, Government is clear that true superfast broadband will be concentrated in the first two thirds of the market and that there is no obvious means whereby the market, unaided, will serve the final third of the population. Any subsidy scheme has to be carefully targeted to avoid distorting competition or subsidising activities which commercial operators would otherwise undertake.

Implementation

Leadership

A newly formed digital partnership will provide the overarching governance for this programme. The role of this body will be to act as a forum for information and the exchange of ideas as well as helping inform and shape broadband strategy across the region.

Monitoring

The Digital Partnership and EEDA will provide the monitoring role for the programme.

Resources

Research carried out for the Broadband Stakeholders Group by Analysys Mason indicates that it will cost up to £2.2 billion to deliver fibre to the home (FTTH) across the region . In the main, the private sector will meet demand. However, public sector investment will be required to stimulate investment in the final third of the region where the market will not deliver service.

Projects funded under the Rural Development Programme for England (RDPE) will help overcome the barriers some rural communities face in accessing broadband to deliver the true promise of Digital Britain throughout the region and to ensure the regional rural economy is able to thrive in the years ahead.

Programme components

4a EREBUS		
The overall aim of the EREBUS is to capture as much demand for next generation broadband services as possible in an information resource to demonstrate sufficient demand to make commercial investment worthwhile. The project will establish a database that will map demand (and supply) down to postcode level. It will be freely available to anybody who needs it to provide a service.		
Key Delivery Agents	**Budget**	**Results**
EEDA to specify and build EREBUS structure in order to monitor and stimulate demand. Members of the Digital Partnership will be encouraged to provide data and help market the project more widely.	Costs for EREBUS are estimated at £200,000 over three years.	**Outputs:** • EREBUS available December 2009 **Outcomes:** • potential reduction in public sector costs for broadband (through aggregation).

4b East of England Broadband Co-operative		
Designed to build on the Independent Networks Co-operative Association (INCA) proposal (for supporting community groups) outlined in the Digital Britain Report but offering a more hands on approach towards supporting community initiatives.		
Key Delivery Agents	**Budget**	**Results**
EEDA to commission the Co-operative working closely with INCA. SONGBIRD to support local community approach.	RDPE funding may be available to support this initiative.	**Outputs:** • cooperative established in Q1, 2010 **Outcomes:** • high levels of community engagement • common technical and business process standards established facilitating the development of open access networks • dissemination of the benefits of next generation broadband and the value of local action • common services and standards for local next generation broadband projects.

4c Local broadband projects		
Aiming to take fibre as deep as possible into the countryside (into areas where the market has no interest in delivering an effective, affordable product) this programme will operate as an open access network providing cost effective backhaul and middle mile capability to any communication provider or community group who wishes to deploy a last mile service to end customers. These local solutions will be deployed when there is sufficient demand identified within EREBUS to interest commercial communication providers or a properly supported community.		
Key Delivery Agents	**Budget**	**Results**
Community Groups or communication providers will be the main delivery agents. An invitation to submit Expressions of Interest will be issued.	Up to £5 million RDPE funding could be allocated to support broadband projects.	**Outputs:** • invitation to submit EoI – Jan 2010 • appraisal and approval of business cases by July 2010. **Outcomes:** • improved proliferation of NGA • reduction in digital exclusion, CO_2 emissions and compensate for lack of services in rural areas • Improved productivity.

Programme 5: Providing required waste infrastructure

Description and strategic fit

If regional, government and EU targets are to be met, the region needs to develop a more sustainable pattern of waste management. The programme is therefore focussed around:

- reducing the levels of waste for disposal through continued investment in intermediate infrastructure
- the development and supply of waste recovery and disposal infrastructure, and
- providing appropriate capacity and skills in the waste sector.

There are a range of drivers to develop new waste treatment infrastructure, including the need to reduce the emission of greenhouse gases from landfill, the reducing availability of landfill sites in the East of England, the need to meet Landfill Allowances by each Waste Disposal Authority (WDA) and the need to conserve resources rather than send material to landfill.

This programme is designed specifically to meet the targets in WM1, WM2, and WM4 of the RSS and the CO_2 reduction target of the RES. It is also essential for the region to meet the EU Landfill Directive and the National targets for the recovery of municipal solid waste. Reducing the amount of biodegradable waste going to landfill will reduce the production of greenhouse gases, although this is difficult to quantify. The programme will reduce waste to landfill and increase effectiveness across the region's waste disposal activities.

Implementation

Leadership

This programme will be managed by EEDA and EELGA, acting jointly as the responsible regional authority, possibly through a Regional Waste Board that would effectively bring together the private sector suppliers with the Waste Disposal and Collection Authorities. The programme will ultimately be delivered by WDAs, Waste Collection Agencies (WCAs) and the private sector. The role of the responsible regional authority is to facilitate this effectively.

Difficulties in delivery of facilities originate from the need to develop a clear understanding of the waste management requirements of the region and the need to secure appropriate sites with planning permission. Regional bodies in conjunction with local authorities play a significant role in these two areas at relatively little financial cost.

To be successful, all three components need to be progressed together. There is also a natural overlap between the skills elements of this programme and the skills for sustainable communities programme. Finally, the implementation of this programme will affect the success of the regional low carbon energy programme through the delivery of fuel.

Monitoring

EEDA and EELGA, acting jointly, will draw upon data from Defra, the Environment Agency, Waste Planning Authorities and regional analysis to monitor the delivery of sites, investment and skills provision.

Resources

Indicative costs for intermediate infrastructure are that an additional £110 million will be required over the Implementation Plan period. For residual waste infrastructure, a further £371 million would be required at current costs. Funding for the majority of intermediate infrastructure comes from local authority capital budgets, or private sources. For residual treatment facilities, the most significant funding stream is credit under the private finance initiative scheme managed by Defra. Some facilities are delivered through the private sector as purely merchant capacity and with increases in landfill costs, this route of delivery is expected to expand.

5a Intermediate waste infrastructure provision

There is an overriding need for the region to reduce the levels of waste going to landfill and to gain the economic value from waste products. The development of transfer stations, household waste recycling centres, sorting and bulking facilities and processing capacity for the manufacture of products from used material are essential to meeting wider waste targets. There is now a need to consider the land requirements of such development across the region, identify and plan for sites and to then assist in managing and delivery of development including planning.

Key Delivery Agents	Budget	Results
County and unitary authorities as WDAs and local authorities as WCAs. Private waste collection, disposal and recycling companies.	Much of the provision will be done privately, including requiring waste sites in new developments. On the assumption that approximately 1.6 million tonnes of municipal waste requires this type of	**Outputs:** • sufficient capacity in recycling centres, transfer stations, etc to help meet waste reduction and recycling targets, as well as landfill allowance trading system landfill allowance trading system (LATS) targets in 2010, 2013 and 2020.

5a Intermediate waste infrastructure provision		
EEDA/EELGA/Environment Agency in a regional monitoring role.	management, an additional £50 million (capital) would be required. A comparable figure for commercial and industrial waste would be £60 million.	**Outcomes:** • a comprehensive network of collection, sorting and bulking facilities to handle all of the different waste streams and materials • a system for the management of secondary materials throughout the region sufficient to meet the quantities of materials in policy WM4 of the RSS.

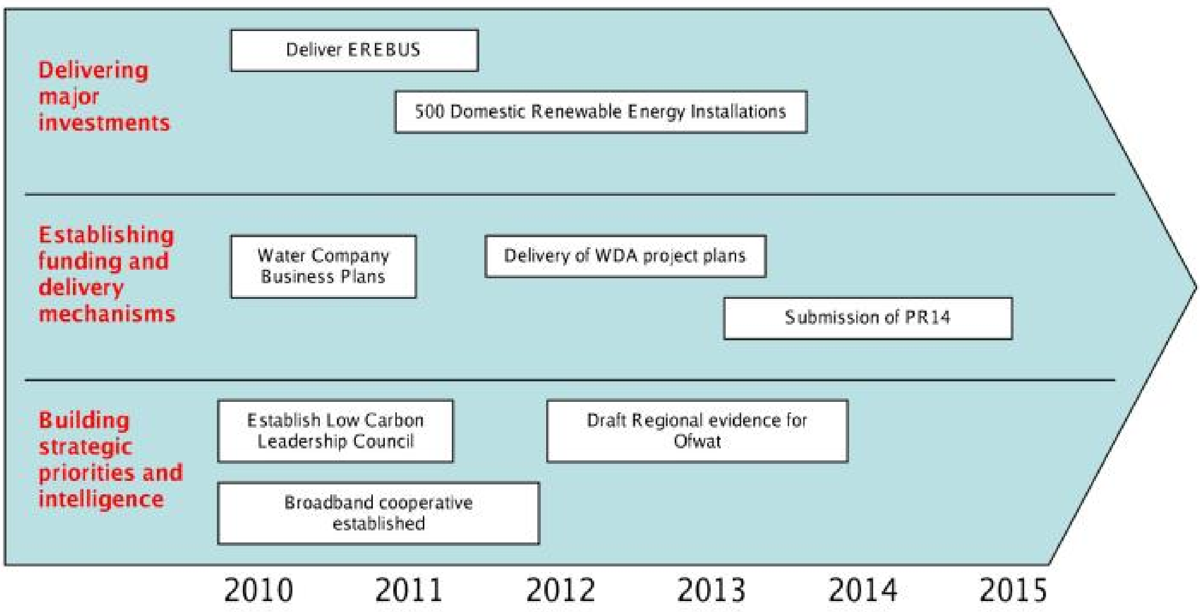
5b Development of waste recovery and disposal infrastructure		
The increasing scarcity of landfill in the region combined with the landfill tax escalator will cause disposal costs to business to rise to potentially punitive rates. The delivery of appropriate municipal waste infrastructure is therefore essential. There is now a need for regional coordination and monitoring of development and supply of municipal waste facilities to meet RSS targets.		
Key Delivery Agents	**Budget**	**Results**
County and Unitary authorities as WDAs. Private waste collection, disposal and recycling companies. EEDA/EELGA/Environment Agency or future regional planning body in a regional planning and monitoring role.	There is expected to be sufficient capacity to manage municipal waste for 2010 if the current project plans of each county are successful. A sum of £444.2 million has been allocated towards the delivery of facilities in the region to date. At comparable rates, a further £371 million (capital) would be required. Beyond 2010 many of the WDAs will have secured funding and the focus will be on the identification and delivery of sites and monitoring of that process to meet targets to 2015.	**Outputs:** • 2009/2010 delivery of current WDA project plans • by 2020 sufficient capacity to separate, process and treat 3 million tonnes of municipal waste and 5.6 million tonnes of commercial and industrial waste materials as a material resource. **Outcomes:** • continued investment in, and delivery of, waste infrastructure • significantly increased capacity to treat waste in line with regional and national targets • reduced CO_2 emissions from waste.

5c Skills in waste management and planning		
There is currently limited capacity in the waste management industry and in the public sector. Short courses are being run by Anglia Ruskin University in conjunction with waste planning authorities to meet their specific needs. The focus of activity is therefore on encouraging local authorities and the private sector to provide both students and funding and secondly, liaison with the training providers.		
Key Delivery Agents	**Budget**	**Results**
A range of educational institutions are involved: • Anglia Ruskin University • the Chartered Institute of Waste Management (CIWM) • the Waste Management Industry Training and Advisory Board (WAMITAB) • the Energy and Utilities Sector Skills Council.	The costs of current Anglia Ruskin courses have been met from waste planning authority budgets. It is estimated that £5,000 per student over three years could fill the gap identified. For an additional two members of staff for each of the ten waste planning authorities, this would amount to a total of £100,000 over three years.	**Outputs:** • by 2015, increased regional provision and take-up of waste planning and management training • delivery of sufficient numbers of graduates from degree-level courses or equivalent high level or vocational qualifications by 2020. **Outcomes:** • a pool of sufficiently qualified staff to deliver the waste management infrastructure required in the Region.

6.4 Key milestones and phasing

The programmes for this theme contain a range of actions and priorities. Figure 9 sets out the sequencing of the key interventions that are anticipated to be made in the first five years of the Implementation Plan.

Figure 9: Phasing of key milestones



Over a three-to-five year timescale, the ambition of the region is to:

- ensure the effective implementation of existing utility companies' business plans and to monitor the performance against regional targets and ambitions
- based on regional evidence, work to achieve an enhanced regulatory environment that provides a greater alignment between growth and infrastructure investment
- continue the region's leading role in the development of the low carbon and renewables sectors
- work closely with regional utilities providers and other partners to ensure that an effective case is made for the next round of infrastructure funding.

6.5 Synergies

The utilities theme focuses on investment in utilities infrastructure, whilst at the same time addressing the issue of resource efficiency. However, many of the outcome targets and priorities relating to energy, water, waste and ICT require an integrated approach with other themes and programmes. For example, achieving a 20 per cent reduction in household water consumption by 2030 requires interventions under the housing theme to reduce water use in new and existing housing.

There are also linkages between the approach to utilities investment and green infrastructure. Delivering water efficiencies is a fundamental requirement of protecting and enhancing a number of the region's habitats. Moreover, the approach to energy production, in particular, will potentially have significant impacts on the management of the region's landscapes. The approach to maximising the economic benefits from innovation in the utilities sector will require a joint response with programmes under the innovation and skills themes. In particular, on ICT, the provision of broadband infrastructure has been matched with a programme approach that enables effective take up, and innovative approaches to the management of transport issues through ICT are included under the transport theme.

Finally, it is also important to note the linkages between programmes within the utilities theme (such as the recycling of waste as a fuel source).

6.6 Delivery and capacity

The primary providers of utilities infrastructure are the private sector companies operating in a regulated environment, be they energy, water, waste or ICT providers, and many of them have been involved in the development of the Implementation Plan. The capacity of utilities companies to invest for growth is constrained by commercial considerations. There are issues governing the effect of regulations on the utility companies' ability to invest in advance of growth, because their principal responsibility to the regulator is to provide good-quality value for money services to existing customers. Whilst this is, to some degree, being addressed through the most recent Periodic Review (PR09) for water, issues continue to exist for energy and waste in particular. The programmes in this theme seek to better link the funding of infrastructure to the growth agenda and it is envisaged that there will be a key relationship developed between the above groups and the emerging national body Infrastructure UK.

There are a range of regional structures around the utilities sector that draw together the public and private partners. The regional Water Partnership brings together key bodies such as the water companies, Waterwise East and the Environment Agency to cover the region's water issues. It is recognised that these structures are beneficial and that there is a strong rationale for bringing together the public and private sector in this way. Partly as a result of the work on this Implementation Plan, proposals are in an advanced stage to create a regional Carbon Leadership Council. In terms of waste, discussions are ongoing into the creation of a regional Waste Board that would bring together the Waste Disposal and Collection Authorities and private sector suppliers. A regional Digital Partnership is being formed comprised of regional bodies, local government, communications providers, community groups and commercial companies to act as a forum and strategy shaping body.

The financial position for the delivery of infrastructure and resource efficiency in the region is mixed. In terms of energy, the energy companies are making significant investments in the region. However, the availability of public sector funding to support the low carbon agenda is presently limited. Current water company investment plans total in excess of £500 million, but this only covers the period 2010-2015 and it is anticipated that at least the same amount of investment will be required for the next Period Review period from 2015 onward. Significant capital for waste is required mostly through the private sector but also through Defra to WDAs. £444.2 million has been allocated to date with another £371 million likely to be required. The delivery of ICT infrastructure will require further private sector intervention. EEDA have secured some £200,000 to deliver EREBUS to prime this.

It is clear that central to overcoming the identified constraints and ensuring the timely delivery of infrastructure will be an improved relationship and joint working to include regulators, the utilities companies, local planning authorities and the development industry. The partnership between public and private sector is essential in terms of effectively marshalling resources. It is unlikely that all of the regional requirements could be funded by the private sector alone. In addition, the role of the planning process and in particular, any future Community Infrastructure Levy needs to reflect the needs of infrastructure appropriately, and local authorities will have a strong interest through their statutory responsibilities.

The implications for these programmes at a sub-regional scale are varied. Clearly, the development of broadband infrastructure is facing particular issues relative to rural and peripheral parts of the region, and the Broadband programme is designed specifically to address these locations. In terms of energy and water there is evidence to show that, whilst issues of infrastructure pressures are being felt across the region, there are some areas where this is particularly pressing. The Environment Agency has undertaken detailed modelling of the impact of housing and water efficiency policies on water supplies in the East of England.[2] This has shown that, under a variety of scenarios, a significant part of the region will enter into water deficit over the lifetime of the current RSS. Local 'hotspots' include: Luton, Stevenage and Harlow; Peterborough and Bedford; and Cambridge and surrounding area. The regional power study has similarly identified that there are pinch points in the region for electricity. These are largely linked to major developments such as Adastral Park in the Haven Gateway.

2 The Impact of Housing and Water Efficiency Policies on Water supplies to the East of England – Evidence for the Review of the East of England Plan – RSS14, Environment Agency March 2008.