Memorandum for Environmental Audit Committee

Waste and recycling: review of Defra's 2010 decision to withdraw the provisional allocation of PFI credits from seven (out of 18) PFI projects

Interactive PDF

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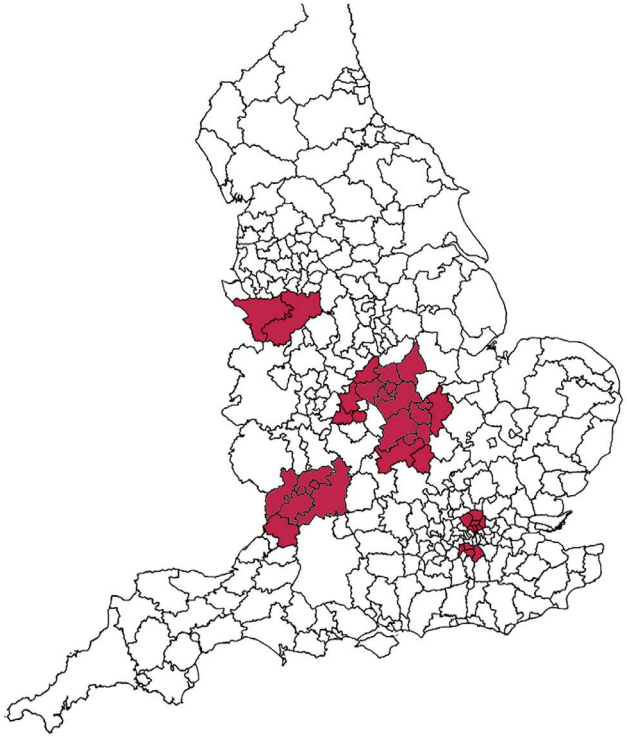
Introduction

On 20 October 2010, the Department for Environment, Food & Rural Affairs (Defra) announced the withdrawal of provisional allocation of PFI credits from seven out of 18 projects, which it deemed were no longer needed to meet 2020 landfill diversion targets.



The local authorities affected were:

- Cheshire West and Chester, and Chester East;
- Coventry, Solihull and Warwickshire;
- Gloucestershire;
- Leicestershire;
- Milton Keynes and Northamptonshire;
- North London Waste Authority; and
- South London Waste Partnership.

This document outlines some of the evidence that was available to Defra and HM Treasury to make this decision. It also outlines progress made on waste and recycling since and the current likelihood of England achieving its share of the EU Landfill Directive targets set for the UK.

Local authorities which retained their provisional allocation of PFI credits in 2010 were: (1) Barnsley, Doncaster and Rotherham, (2) Bradford and Calderdale, (3) Essex and Southend-on-Sea, (4) Hertfordshire, (5) Leeds, (6) Merseyside Waste Disposal Authority and Halton, (7) Norfolk, (8) North Yorkshire and City of York, (9) South Tyne and Wear Partnership, (10) South West Devon Waste Partnership and (11) Wakefield City Council.

EU Landfill Directive

The EU Landfill Directive sets targets for the reduction of biodegradable municipal waste (BMW) sent to landfill.

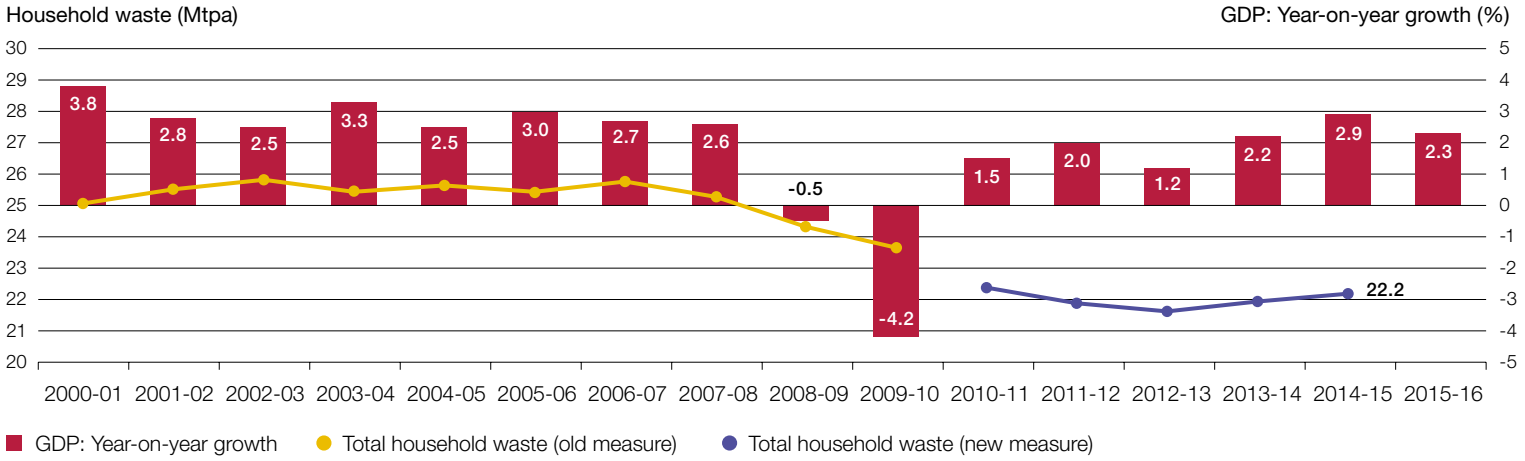
Target	Measure	Progress	Progress against 2020 target
UK BMW sent to landfill	26% of the 1995 level by 2020	6% of the 1995 level in 2013 (UK)	5 percentage points under the 2020 target in 2013
UK recycling rate	50% of household waste recycled by 2020	44.9% in 2014	5 percentage points over the 2020 target in 2014

In England, the EU Landfill Directive requires no more than **10.2 million tonnes** of BMW to be sent to landfill by 2020.

Household waste arisings have fallen since 2002-03

There are a number of drivers which contribute to changes in household waste arisings, for example, changes in the economy, attitudes to waste, access to finance and government policy. It is not currently known to what degree each of these and other drivers have contributed to changes in waste arisings over time.

Household waste compared to GDP growth



Note

1 The methodology used to calculate household waste arisings changed in 2010. Figures from the old and new measure are not directly comparable.

2 Million tonnes per annum (Mtpa).

Source: *UK Statistics on Waste* and Office for National Statistics second estimate of GDP, year-on-year growth

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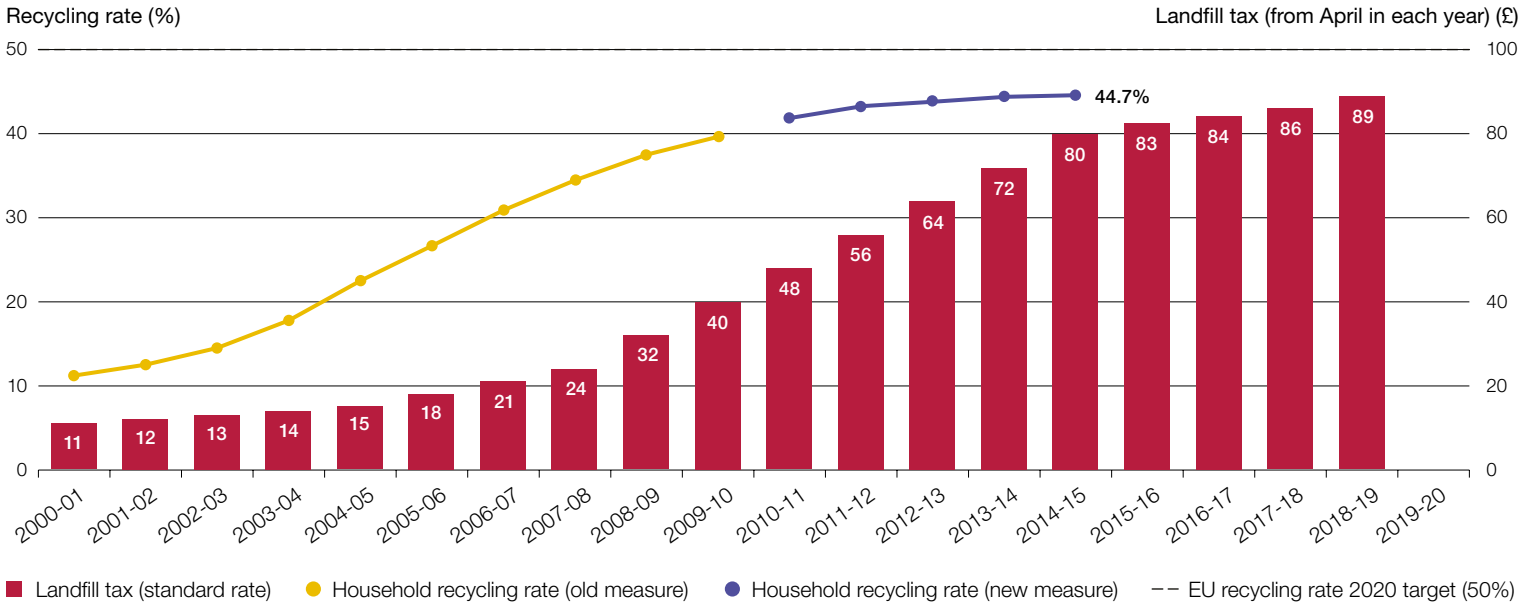
Household recycling rates and landfill tax have increased every year since 2000-01, but progress has slowed in recent years

Household recycling rate and landfill tax



Notes

1 The methodology used to calculate the recycling rate changed in 2010. Figures from the old and new measure are not directly comparable.

2 Landfill tax rates are planned through to 2018-19.

Source: *UK Statistics on Waste* and gov.uk Landfill Tax annoucements

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FINDINGS

In 2010-11, Defra decided to save money and accept greater EU infraction risk on its EU Landfill Directive targets by stopping funding to seven PFI waste projects. Defra estimated this decision would reduce the financial impact on Defra's RDEL in 2017-18 by between £26 million and £68 million, reducing new waste capacity in 2020, by around 0.45 Mtpa. (Slides 7 to 11)

Defra's model to rank PFI waste projects showed that those with the highest overall scores in the model were also the most cost-effective. A multi-criteria decision analysis model was developed to rank projects against three criteria: deliverability, cost benefit and timing. These were combined into a single weighted score. (Slides 12 and 13)

Defra's 2014 estimates of municipal waste levels in 2020 are significantly lower than earlier estimates. Estimates for household waste are 22% lower compared with 2010 estimates and those for commercial and industrial (C&I) waste are 18% lower. (Slide 14)

Forecasts of recycling rates in 2020 remain largely unchanged, but the BMW content of residual waste has also been revised down. Forecast recycling rates for local authority waste remain at 50% while the forecast rate for C&I waste has increased to 62% compared with a previous forecast in 2010 of 60%. Forecast BMW content in 2020 has been revised down from 68% to 50% as a result of new research commissioned by Defra, which reported in May 2012. (Slide 15)

Given the wider evidence base and significant changes in forecast waste estimates for 2020, we conclude that England is in a good position to achieve its share of the EU Landfill Directive targets set for the UK. Defra's most recent (October 2014) estimate of the likelihood of achieving both the local authority and C&I targets is in excess of 95%. (Slides 16 and 17)

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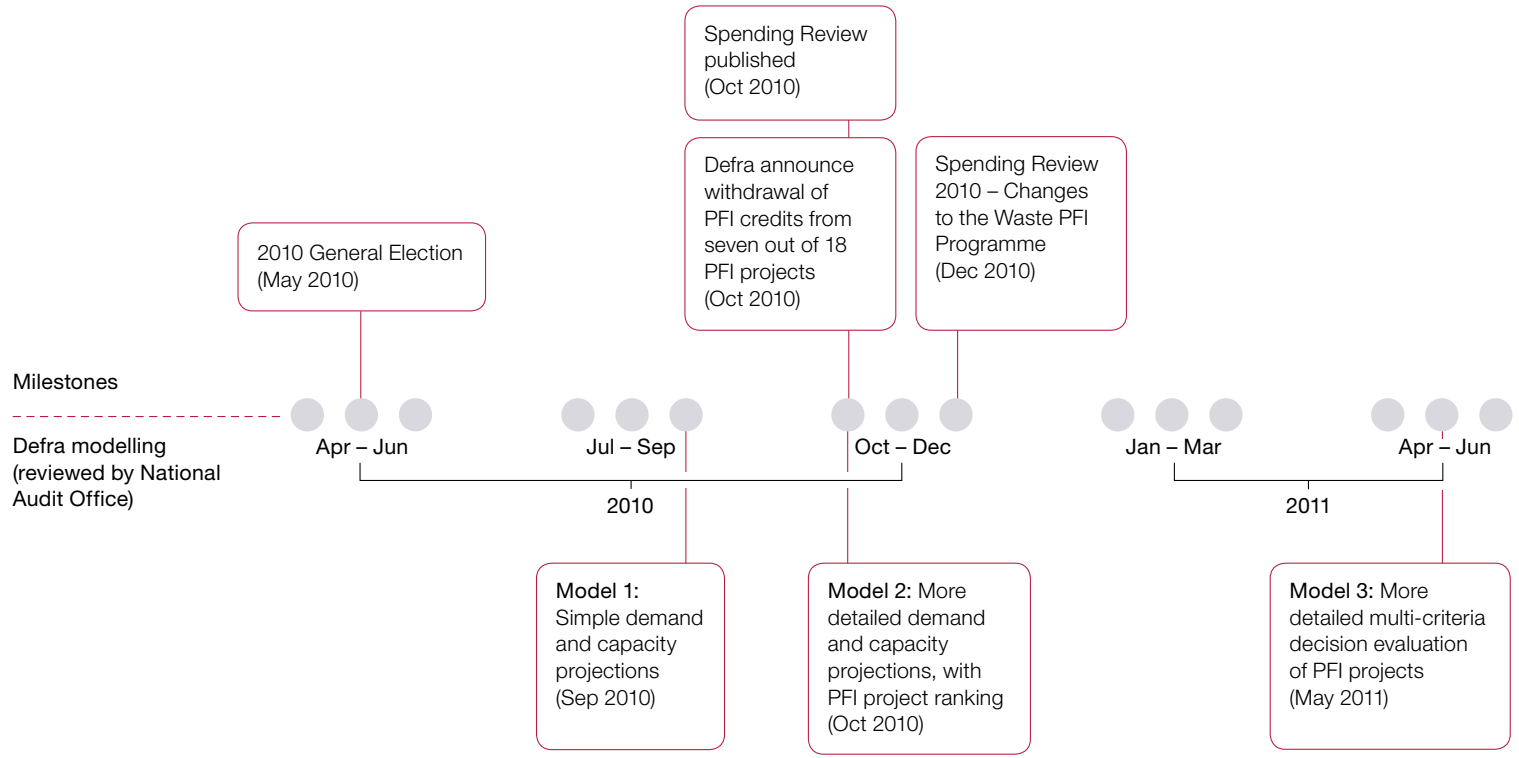
Decision-making timetable



Source: National Audit Office analysis

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Defra's modelling of projects and waste capacity balances for 2020, in 2010

	Model 1: Simple demand and capacity projections (Sep 2010)	**Model 2:** More detailed demand and capacity projections, with PFI project rankings (Oct 2010)	**Model 3:** More detailed multi-criteria decision evaluation of PFI projects (May 2011)
Model Output	Estimated waste capacity balance in 2020 for three modelled scenarios	Project ranking and estimated waste capacity balance in 2020 for three modelled scenarios	Project ranking
Data	Forecast waste growth to 2020 for household and C&I waste arisings	Project level data on waste capacity from 2017-18 and financial impact on Defra's budget in 2014-15 and 2017-18	Project level evaluation of deliverability of benefits, cost–benefit ratio and timing of benefits
Assumptions	Forecast recycling rates, BMW content of residual wastes, EU Landfill Directive allowances and capacity in 2020		Evaluation weighting: • Deliverability of benefits 50% • Cost–benefit ratio 40% • Timing of benefits 10%
Risk adjustments	–	• Project-level risk adjustments of 10%–40% • Programme risk adjustment of 45% applied to all projects	–
Sensitivity analysis	Waste arisings in 2020, three scenarios considered: central (+0%), prudent (+7.5%) and worst case (+15%)	• Three PFI credit funding options: 18, 11 and 0 projects • Five waste growth scenarios in 2020: 5.59–8.80Mtpa	–

Source: National Audit Office analysis of Defra modelling

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As a result of funding 11 rather than 18 PFI projects, Defra estimated new capacity in 2020 would fall by around 0.45 Mtpa

Mtpa	Option 1: 18 projects	Option 2: 11 projects	Option 3: 0 projects
New capacity – no risk adjustment (a)	3.14	1.92	0.00
New capacity – project risk adjustment (b)	2.20	1.34	0.00
New capacity – project and programme risk adjustment (c)	1.21	0.74	0.00
Add back capacity delivered without PFI credits (d)	0.00	0.02	0.06
Other LA projects (e)	4.36	4.36	4.36
New capacity from LA projects (f) = (c) + (d) + (e)	5.57	5.12	4.42
New capacity from non-LA projects (g)	2.01	2.01	2.01
Total new capacity – including project risk (h) = (f) + (g)	7.58	7.13	6.43

Source: National Audit Office analysis of *Model 2: More detailed demand and capacity projections, with PFI project ranking* (Oct 2010)

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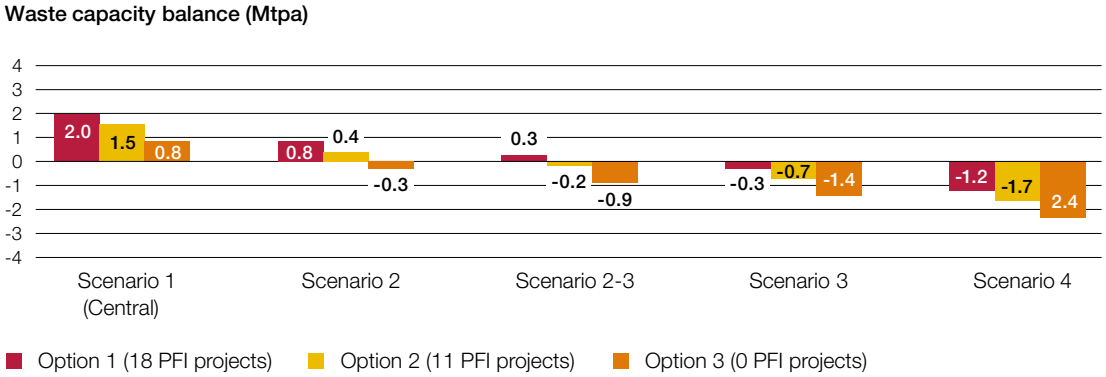
This decision increased the risk of Defra not achieving its EU Landfill Directive targets…

The waste capacity balance is a measure of the difference between capacity and BMW arisings in 2020 less EU Landfill Directive Allowances. In 2010, Defra estimated this balance using the three 'new' capacity options and five growth rate assumptions. The evidence indicates selecting option 2 (11 PFI projects), led to estimated capacity surpluses for scenarios 1, 2 and 2/3 but deficits for 3 and 4.

	Scenario 1 (Central)	Scenario 2	Scenario 2/3	Scenario 3	Scenario 4
Growth scenario	5.6 Mtpa	6.7 Mtpa	7.3 Mtpa	7.9 Mtpa	8.8 Mtpa
Estimated likelihood	60%	30%	20%	9%	1%



Source: National Audit Office analysis of *Model 2: More detailed demand and capacity projections, with PFI project ranking* (Oct 2010) and *Spending Review 2010 – Changes to Waste PFI Programme*

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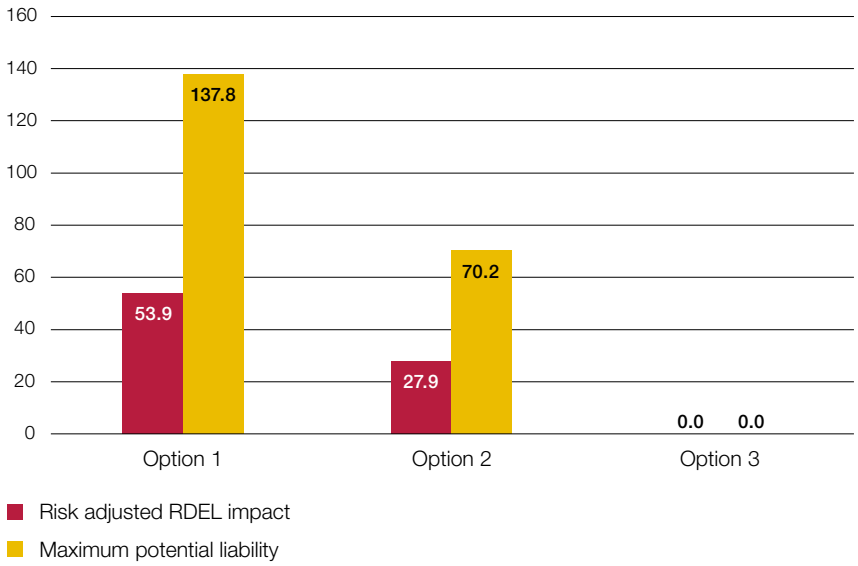
…but was estimated to have saved between £26 million to £68 million in 2017-18

Choosing option 2 (11 PFI projects) did increase the risk of Defra being infracted on its 2020 EU Landfill Directive targets when compared with option 1 (18 PFI projects), but this decision also led to a reduced financial impact on Defra's RDEL of between £26 million and £68 million in 2017-18.

Financial impact on Defra's RDEL in 2017-18 (£m)



Source: National Audit Office analysis of *Model 2: More detailed demand and capacity projections, with PFI project ranking (Oct 2010)*

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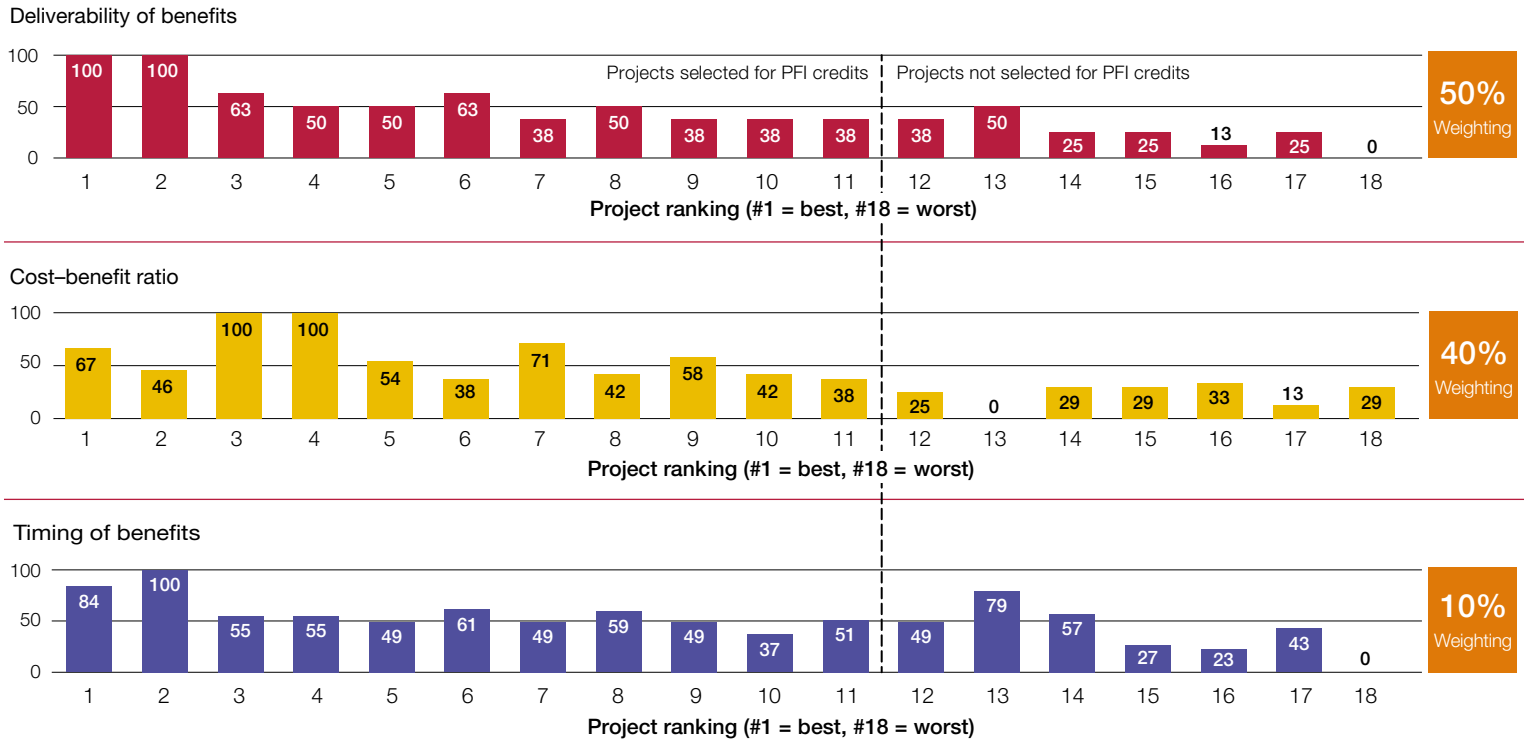
Criteria on deliverability, cost benefit and timing were used– and combined into a single weighted score, to rank projects



Note

1 All projects were ranked for deliverability of benefits, cost benefit ratio and timing of benefits on a standard 0 to 100 scale, where the best scoring project receives a score of 100 and the worst scoring project receives a score of 0. All projects in between are rebased to fit on a 0 to 100 scale.

Source: National Audit Office analysis of Model 3: More detailed multi-criteria decision evaluation of PFI projects (May 2011)

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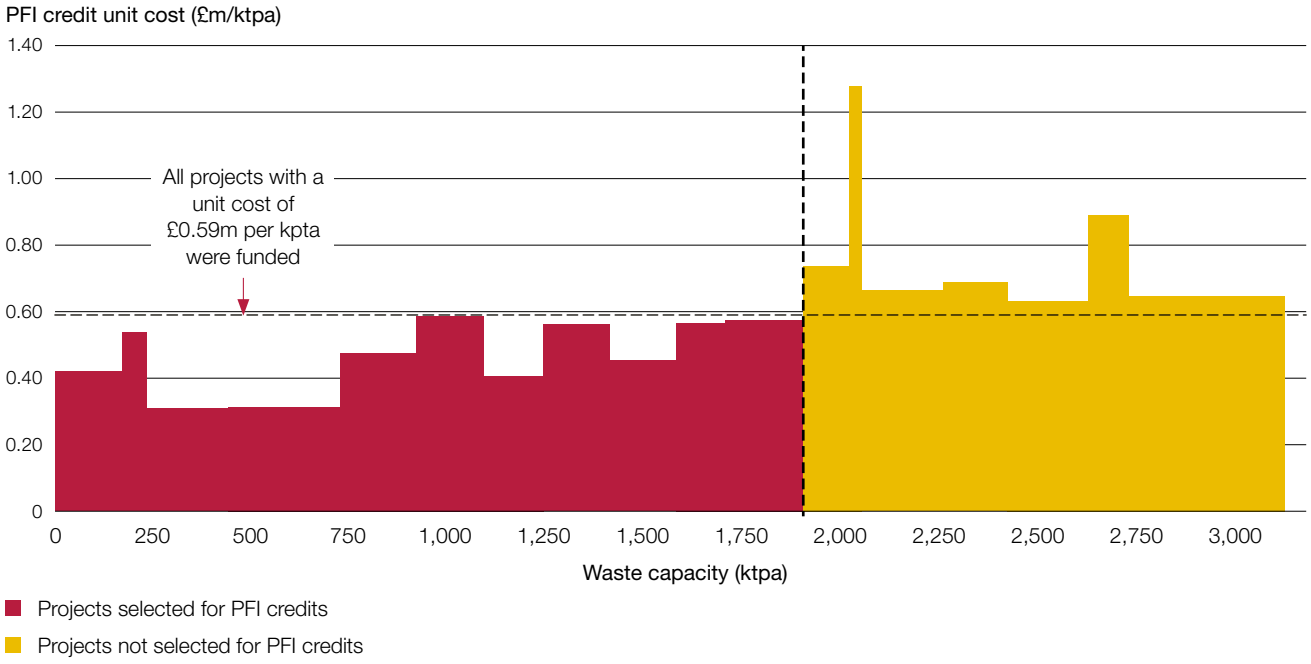
DECISION PROCESS

The projects which were selected for funding were the most cost-effective



Notes

1 The chart presents the reported BMW diversion capacity in 2020. This data is not risk adjusted and does not directly reconcile with capacity data presented elsewhere in this document.

2 Kilo tonnes per annum (ktpa).

Source: National Audit Office analysis of *Model 3: More detailed multi-criteria decision evaluation of PFI projects* (May 2011)

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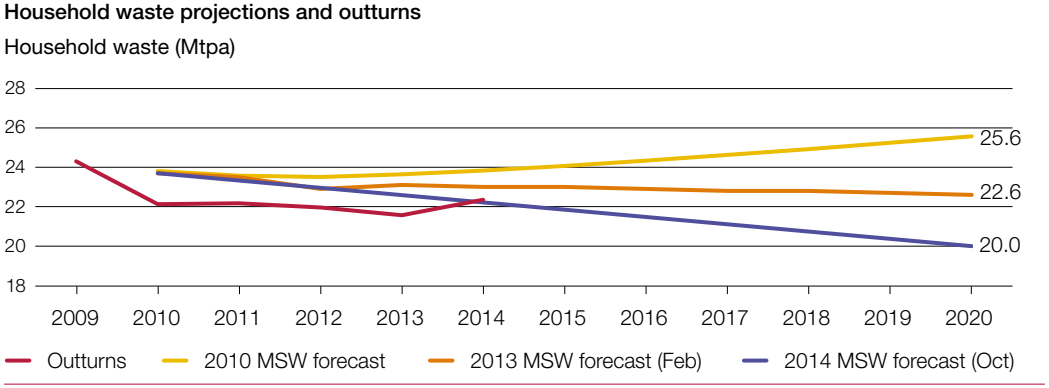
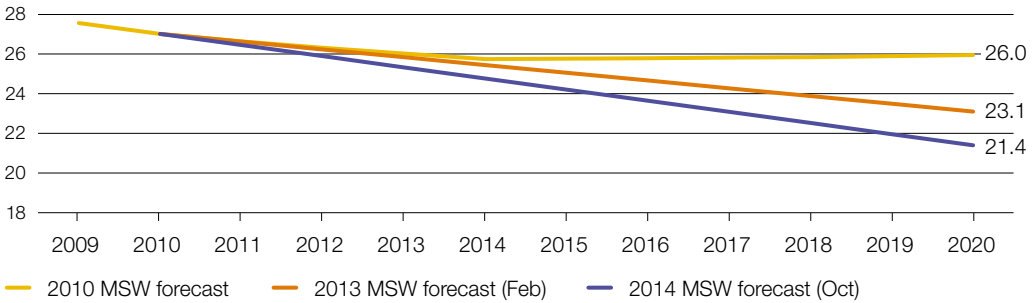
REVISED WASTE FORECASTS

Defra's 2014 estimates of municipal waste levels in 2020 are significantly lower than earlier estimates

Household waste projections and outturns



C&I waste projections and outturns



Source: National Audit Office analysis of Model 1: simple demand and capacity projects, Defra household waste arisings forecast for England, UK Statistics on waste and forecasting 2020 waste arisings and treatment capacity

In 2013 and 2014, Defra updated its municipal solid waste (MSW) forecasts in response to new data and technical recommendations made by NERA Economic Consulting.

The revised 2014 forecasts indicate waste arisings in 2020 could be:

- 5.6 Mtpa, or 22% lower for household wastes compared to the 2010 forecast
- 4.6 Mtpa, or 18% lower for C&I wastes compared to the 2010 forecast

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4 REVISED WASTE FORECASTS

Forecasts of recycling rates in 2020 remain largely unchanged, but the BMW content of residual waste has also been revised down

Assumption	2010 Forecast	2013 Forecast (Feb)	2014 Forecast (Oct)
Waste arisings in 2020 (Mtpa)			
Local authority waste	25.6	22.6	20.0
C&I waste	26.0	23.1	21.4
Recycling rate in 2020			
Local authority waste	50%	51%	50%
C&I waste	60%	62%	62%
BMW content in 2020			
Local authority waste	68%	68%	50%
C&I waste	68%	68%	50%

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs *Forecasting 2020 waste arisings and treatment capacity*

Between 2010 and 2013, Defra based its assumption on the BMW content of residual waste (68%) on research undertaken in 2002 (*Analysis of household waste composition and factors driving household waste increases*). New research completed by Resource Futures (*Biodegradability of municipal solid waste*, report WR1003, May 2012) estimated the biodegradable content of mechanically treated and mixed municipal waste as being between 46% and 56%. As a result, Defra has revised down its BMW content assumption from 68% to 50%.

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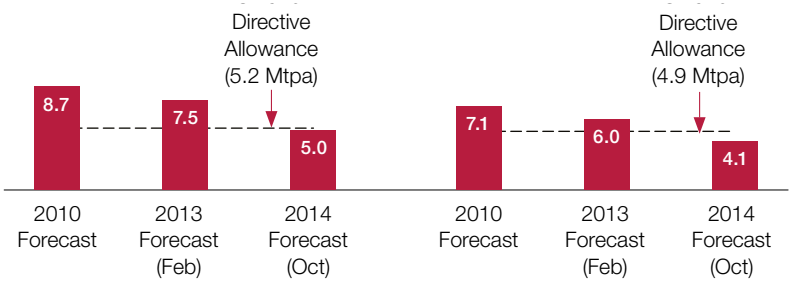
REVISED WASTE FORECASTS

As a result, there is likely to be much less waste to manage in 2020 than initially anticipated in 2010

(Million tonnes per annum)	Local authority collected municipal waste			C&I classified as municipal waste		
	2010 Forecast	2013 Forecast (Feb)	2014 Forecast (Oct)	2010 Forecast	2013 Forecast (Feb)	2014 Forecast (Oct)
Forecast MSW arisings (a)	25.6	22.6	20.0	26.0	23.1	21.4
Recycling assumption (b)	12.8	11.5	10.0	15.6	14.3	13.3
Residual BMW assumption (c)	4.1	3.5	5.0	3.3	2.8	4.1
Forecast demand (d) = (a) - ((b) + (c))	8.7	7.5	5.0	7.1	6.0	4.1
EU Landfill Directive Allowance (e)	5.2	5.2	5.2	4.9	4.9	4.9



Local authority collected municipal waste

C&I classified as municipal waste

National Audit Office analysis of model 1: simple demand and capacity projections

Reductions in the forecast level of waste in 2020 mean Defra is in line to meet the 2020 EU Landfill Directive target for both local authority and C&I wastes, without needing to take into account new PFI-funded capacity.

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The evidence indicates there is a strong likelihood that Defra will be able to achieve its EU Landfill Directive targets

	2013 Forecast (Feb)	2013 Forecast (Oct)	2014 Forecast (Oct)
Likelihood of meeting target	95%–97%	95%–96%	97%–99%
Average surplus (Mt)	2.4–2.7	2.5–2.7	5.5–6.8

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs Forecasting 2020 *waste arisings and treatment capacity*

In 2013 and 2014, Defra used Monte Carlo simulation to estimate the likelihood of meeting the EU Landfill Directive target in 2020. This simulation ran 10,000 iterations with probability distributions applied to modelling assumptions. The analysis has consistently estimated that the chances of achieving the EU Landfill Directive target are greater than 95%, with an average surplus of at least 2.4 Mt.

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APPENDIX: HOW THE MODELS WORK

Approach and information sources

Models reviewed by NERA Economic Consulting (unpublished)

(December 2012)

Demand and capacity projections

Super Model v00_025 (NERA).xlsx

Models reviewed by the National Audit Office (unpublished)

(July 2016)

Simple demand and capacity projections (September 2010)

201009116 New Way Capacity Forecasts v8.xls

More detailed demand and capacity projections with PFI project ranking (October 2010)

20101021 Headroom Calculations v0_7.xlsx

More detailed multi-criteria decision evaluation of PFI projects (May 2011)

20110516 PFI Credits DEL EVAL v0_9.xlsx

Notes

1 We have not verified or validated the data and assumptions used in any of the models reviewed in this document, nor how information produced by these models was used in strategic and operational decision-making.

2 We have not verified whether the capacity planned for in 2010 has been achieved within the assumptions used in Defra's original modelling.

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APPENDIX: HOW THE MODELS WORK

Demand and capacity projections model

Defra used a model to forecast waste demand and capacity. The NAO has **not** reviewed this model explicitly.

In December 2012, a Defra-commissioned report from NERA Economic Consulting was published, which provided an independent review of the modelling approach it used to assess whether England will contribute the necessary diversion from landfill for the UK to meet EU Landfill Directive targets. We have reviewed this assessment, and have re-presented the results of the analysis.

Defra's modelling approach consisted of national-level forecasting of:

- demand for diversion capacity; and
- supply of diversion capacity.

The gap between supply and demand at a national level, after taking into account contingencies, provided an insight into whether there is sufficient capacity in place nationally, to meet the EU Landfill Directive target. It is our understanding that this initial forecast was fed into subsequent models, which were used to make decisions on Waste PFI contracts.

The review highlighted a number of technical findings and recommendations to improve Defra's modelling approach. These included the choice of statistical techniques and use of assumptions, but the main conclusion of the review was Defra's approach towards understanding and quantifying uncertainty. NERA Economic Consulting recommended Defra should use a stochastic modelling approach, to explicitly account for the range of uncertainties around all the key modelling assumptions. Therefore, rather than using contingency factors to build a safety buffer into the forecast, Monte Carlo simulation techniques could be used to estimate the probability of Defra achieving its EU Landfill Directive targets.

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Simple demand and capacity projections (1 of 2)

The '201009116 New Way Capacity Forecast v8.xls' produced an estimate of the balance between capacity and demand in 2020 using data and assumptions available in 2010. It did this by using forecasts on waste arisings for local authority and C&I wastes. It is our understanding that these forecasts are taken directly from the demand and capacity projections model without adjustment (NOTE – we have not been able to verify this data input, as we have not seen the source model).

The model incorporates three scenarios for both local authority and C&I classified wastes, and then applies a series of assumptions (see table)

Assumptions	Local authority collected municipal waste			C&I classified as municipal waste		
	Central	Prudent	Worst case	Central	Prudent	Worst case
Forecast MSW arisings	+0%	+5%	+10%	+0%	+10%	+20%
Recycling assumption	50%	50%	50%	60%	60%	60%
Residual BMW assumption	68%	68%	68%	68%	68%	68%
EU Landfill Directive Allowance	5.2Mt	5.2Mt	5.2Mt	4.9Mt	4.9Mt	4.9Mt
Forecast capacity	6.2Mt	6.2Mt	6.2Mt	2.0Mt	2.0Mt	2.0Mt

Simple demand and capacity projections (2 of 2)

Assumptions	Local authority collected municipal waste (Mtpa)			C&I classified as municipal waste (Mtpa)		
	Central	Prudent	Worst case	Central	Prudent	Worst case
Forecast MSW arisings (a)	25.6	26.9	28.1	26.0	28.5	31.1
Recycling assumption (b)	12.8	13.4	14.1	15.6	17.1	18.7
Residual BMW assumption (c)	4.1	4.3	4.5	3.3	3.7	4.0
Forecast demand (d) = (a) - ((b) + (c))	8.7	9.1	9.6	7.1	7.8	8.5
EU Landfill Directive Allowance (e)	5.2	5.2	5.2	4.9	4.9	4.9
Residual forecast demand (f) = (d) – (e)	3.5	3.9	4.3	2.1	2.8	3.5
Forecast capacity (g)	6.2	6.2	6.2	2.0	2.0	2.0
Position against demand (h) = (g) – (f)	2.7	2.2	1.8	-0.1	-0.8	-1.5

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More detailed demand and capacity projections with PFI project ranking (1 of 5)

The model '20101021 Headroom Calculations v0_7.xlsx' contains a ranking of 18 PFI projects and uses the project-level information to measure the impact of funding up to 18 waste PFI projects on the waste capacity balance.

To do this, the model is split into two parts:

1 **Project data** – Data on each project is used to measure the impact on wasteflows in 2017-18 and the financial impact on Defra's RDEL in 2014-15 and 2017-18

2 **Calculations** – Information from the 'project data' part of the model is used to measure aggregate new capacity in 2020 and the associated balance of demand and capacity, based on three main options.

- Option 1 – maintain credit allocations for 18 projects
- Option 2 – maintain credit allocations for 11 projects
- Option 3 – maintain credit allocations for 0 projects

More detailed demand and capacity projections with PFI project ranking (2 of 5)

The project data part of the model uses a risk assessment to adjust the underlying fundamentals of waste PFI projects. The risk assessment takes account of:

- Abnormally long project gestation (= 1 issue)
- Exceptional commercial challenges (= 1 issue)
- Joint working project (= 1 issue)

This risk assessment is applied to each project in turn. The number of issues are added up, which generates an associated risk factor (see table).

No of Issues	Risk Factor (%)
0	90
1	80
2	70
3	60

In addition to project risk assessment, each project is also subject to a programme-risk level factor of 45%, that is:

- Estimated wasteflows in 2017-18 = estimated wasteflows x project risk factor x (1-0.45)
- Estimated financial impact on Defra RDEL in 2014-15 = PFI grant payable in 2014-15 x risk factor x (1-0.45)
- Estimated financial impact on Defra RDEL in 2017-18 = PFI grant payable from 2017-18 onwards x project risk factor x (1-0.45)

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More detailed demand and capacity projections with PFI project ranking (3 of 5)

Project ranking	Non-risk adjusted impact on wasteflows in 2017-18 (Cumulative) (Ktpa)	Risk adjusted impact on wasteflows in 2017-18 (Cumulative) (Ktpa)	Non-risk adjusted financial impact on Defra's RDEL in 2017-18 (Cumulative) (£m)	Risk adjusted financial impact on Defra's RDEL in 2017-18 (Cumulative) (£m)
1	174	77	5.6	2.5
2	280	117	11.8	4.8
3	490	187	16.6	6.4
4	776	281	23.8	8.8
5	966	365	30.6	11.8
6	1,138	421	38.2	14.3
7	1,290	472	43.1	15.9
8	1,450	542	50.2	19.1
9	1,621	598	56.2	21.0
10	1,741	658	64.7	25.3
11	1,910	741	70.2	27.9
12	1,941	753	75.7	30.1
13	2,058	812	82.5	33.4
14	2,266	880	92.9	36.9
15	2,430	952	101.4	40.6
16	2,634	1,031	111.0	44.3
17	2,737	1,076	118.1	47.4
18	3,136	1,208	137.8	53.9

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More detailed demand and capacity projections with PFI project ranking (4 of 5)

The calculations part of the model uses project-level data to aggregate and present capacity projections across three options:

- **Option 1** – maintain credit allocations for 18 projects
- **Option 2** – maintain credit allocations for 11 projects
- **Option 3** – maintain credit allocations for 0 projects

Mtpa	Option 1 18 projects	Option 2 11 projects	Option 3 0 projects
New capacity – no risk adjustment (a)	3.14	1.92	0.00
New capacity – project risk adjustment (b)	2.20	1.34	0.00
New capacity – project and programme risk adjustment (c)	1.21	0.74	0.00
Add back capacity delivered without PFI credits (d)	0.00	0.02	0.06
Other local authority (LA) projects (e)	4.36	4.36	4.36
New capacity from LA projects (f) = (c) + (d) + (e)	5.57	5.12	4.42
New capacity from non-LA projects (g)	2.01	2.01	2.01
Total new capacity – including project risk (h) = (f) + (g)	7.58	7.13	6.43

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More detailed demand and capacity projections with PFI project ranking (5 of 5)

The model also incorporates five scenarios of waste growth (measured as the demand for BMW diversion capacity). The source of these projections is not known. The gap between forecast capacity and demand across all five scenarios is used to measure the likelihood of achieving either a waste surplus or deficit in 2020.

Mtpa	Option 1 18 projects	Option 2 11 projects	Option 3 0 projects
Capacity			
Total new capacity – including project risk	8.58	7.13	6.43
Demand			
Scenario 1	5.59	5.59	5.59
Scenario 2	6.74	6.74	6.74
Scenario 2/3 (halfway between scenarios 2 and 3)	7.31	7.31	7.31
Scenario 3	7.88	7.88	7.88
Scenario 4	8.80	8.80	8.80
Waste capacity balance			
Scenario 1	1.99	1.54	0.84
Scenario 2	0.85	0.40	-0.30
Scenario 2/3 (halfway between scenarios 2 and 3)	0.28	-0.17	-0.87
Scenario 3	-0.29	-0.74	-1.44
Scenario 4	-1.22	-1.67	-2.37

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More detailed multi-criteria decision evaluation of PFI projects (1 of 2)

The model '20110516 PFI Credits DEL EVAL v0_9.xlsx' uses multi-criteria decision analysis to rank waste PFI projects from most to least desirable. The three weighted criteria used in the model are:

- **Deliverability of benefits** – out of 100 and weighted at 50%
- **Cost–benefit ratio** – out of 100 and weighted at 40%
- **Timing of benefits** – out of 100 and weighted at 10%

Deliverability of benefits

Deliverability of benefits is quantified using assessments of project and planning status. The assessment criteria are shown below.

Each project is scored out of 5 for both project and planning status. The metrics are added together to give a score out of 10. This aggregate metric is then used to rank projects from 0 to 100, where the best-scoring project receives a score of 100 and the worst-scoring project receives a score of 0 and all projects in between are rebased to fit on a 0 to 100 scale.

Project status	Planning status	Score
Post-appointment of preferred bidder (PB)	Preferred bidder has planning consent	5
Post-close of dialogue but pre-PB appointment	Authority has consent on reference site	4
In dialogue with the final two bidders	One of two bidders has planning consent	3
In dialogue with shortlist of bidders (three or four)	Acceptable site for whole solution being offered	2
In dialogue with a long list of bidders (five or more)	Acceptable site for part-solution being offered	1
Pre-opening of competitive process	–	0

More detailed multi-criteria decision evaluation of PFI projects (2 of 2)

Cost–benefit ratio

Cost–benefit for waste PFI projects is defined as reported BMW diversion capacity in 2020 (k tpa) / Total PFI credits (£m)

This metric is used to rank projects from 0 to 100, where the best-scoring project receives a score of 100 and the worst-scoring project receives a score of 0 and all projects in between are rebased to fit on a 0 to 100 scale.

Timing of benefits

The timing of benefits is measured as the difference (in months) between the evaluation date (September 2010) and the estimated operations starting date.

Again, this metric is used to rank projects from 0 to 100, where the best-scoring project receives a score of 100 and the worst-scoring project receives a score of 0 and all projects in between are rebased to fit on a 0 to 100 scale.

These assessments produce three scores out of 100 for deliverability of benefits, cost–benefit ratio and timing of benefits. Each score is then multiplied by the weighted percentage (that is, 50%, 40% and 10%) to produce a final combined weighted score out of 100. This score is used to sort projects from most to least desirable.

The decision on which projects to fund then simply comes down to a choice on the amount of capacity needed. So, if only 11 out of 18 projects are required, the top 11 ranked projects from the model are selected.