

# Options for MRF and IVC facilities in Warwickshire

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# Outline

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- Study to investigate options for introducing BMW diversion and additional recycling through move to MRF and in-vessel composting (IVC)
  - Also to look at options for partnership working with neighbours
  - Identify optimal solution for Warwickshire council tax payer
  - Provide stages needed for development of desired solution.
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- Modelling results
  - Way forward
  - Issues to consider

# Scenarios for kitchen waste & green waste

Sc	Green waste	Kitchen waste	Mixed biowaste	Residual waste
1	Fortnightly	AWC		Weekly
2	Fortnightly	AWC		AWC
3	Fortnightly	Weekly		Weekly
4	Fortnightly	Weekly		AWC
5			AWC	Weekly
6			AWC	AWC
7			Weekly	Weekly
8			Weekly	AWC

- Collection frequency and capture rate is linked to refuse collection
- Weekly refuse collection = limited or no incentive to participate

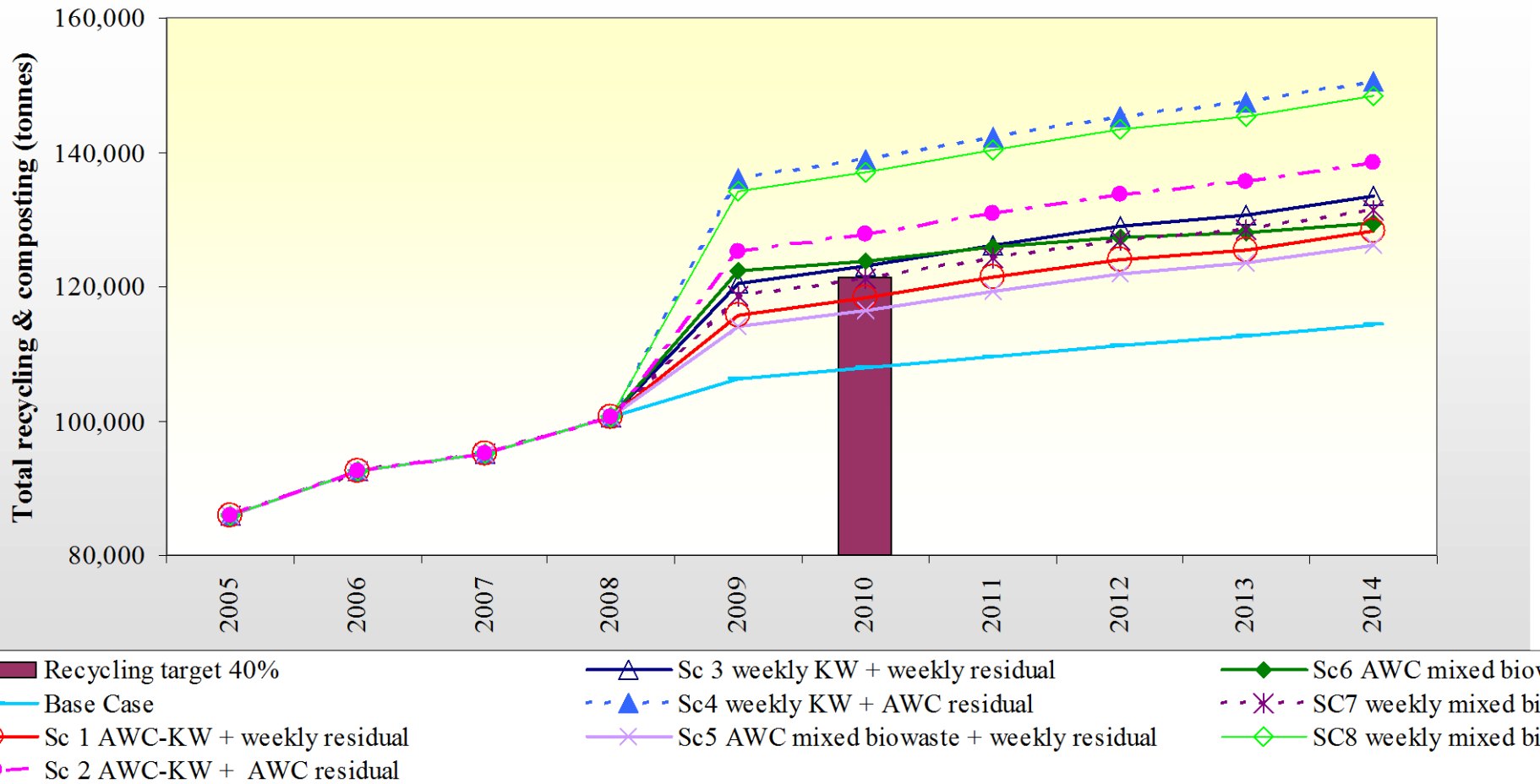


# Other modelling assumptions

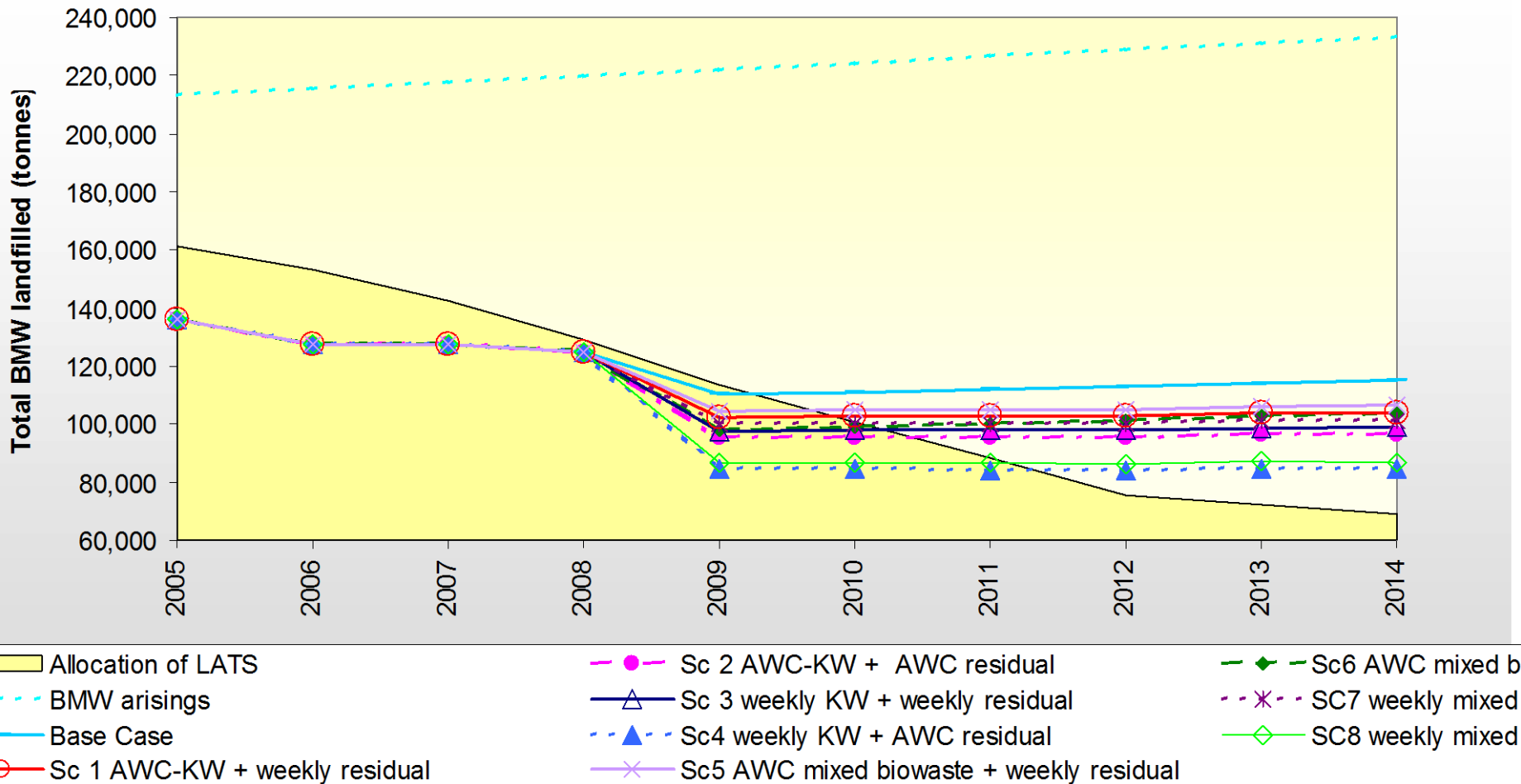
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- 1% overall growth, 12% household growth 2006-2016
- All districts start kitchen waste collection 2009/10, linked to AWC of refuse
- Co-mingled starts 2009/10 (North Warwick 2011/12, Warwick 2013/14)
- Frequency of recyclates remains at fortnightly (N&B weekly)
- Co-mingled includes paper, cans, card, plastic bottles (NOT glass)
- Increase of kerbside recycling by 40% with AWC of residuals due to increased participation rate (North Warwickshire & Warwick 35%)
- Assumed co-mingled collection achieves same kg/HH/week
- Bring schemes collect more glass, but only small increase
- Kitchen waste collected separately in 25 litres containers
- Kitchen waste/mixed biowaste delivered to Packington and Gaydon
- Dry recyclables delivered to Packington (Rugby to Rugby MRF)
- Rejects: MRF = 10%, IVC and AD = 5%, windrow = 1%

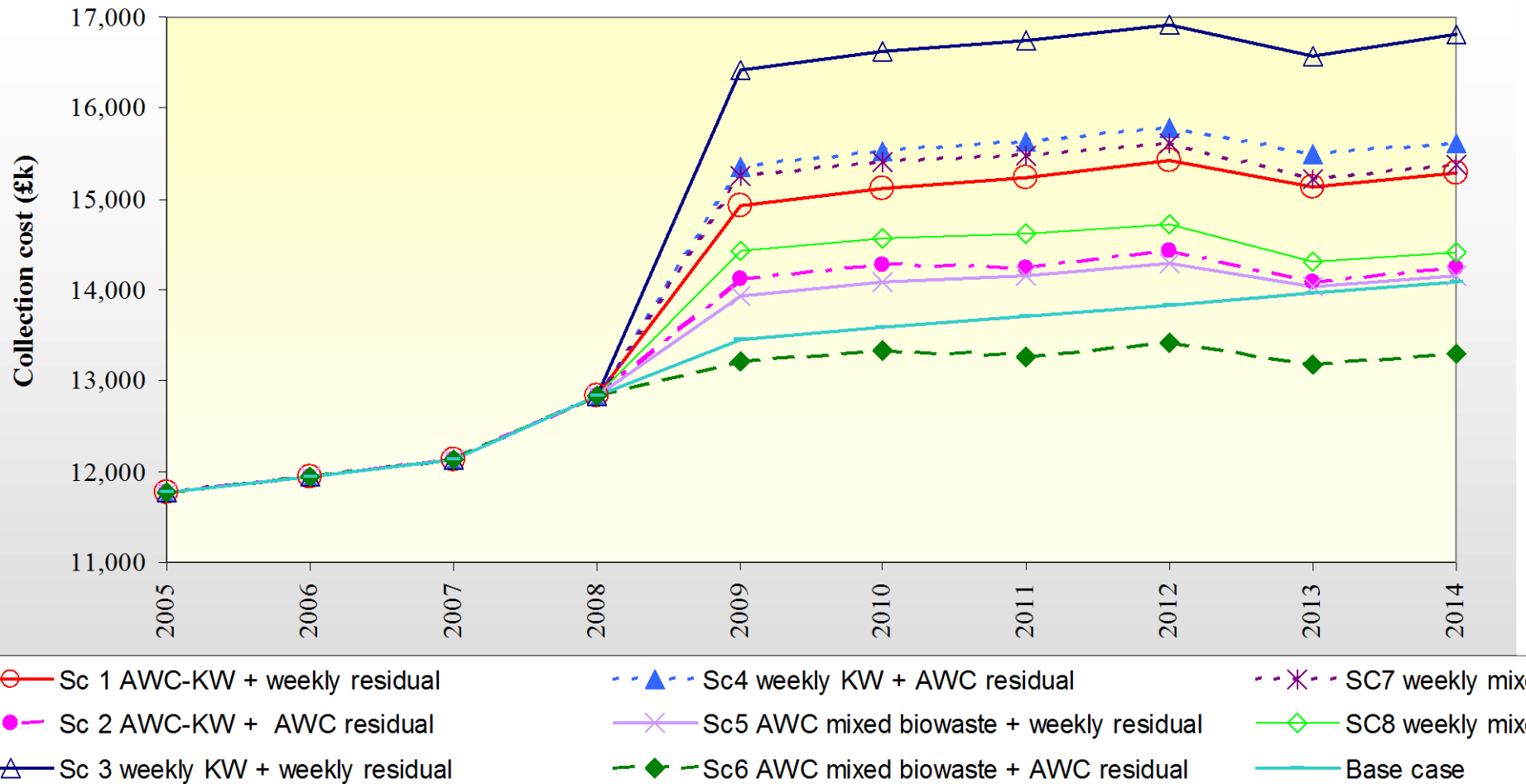
# Recycling performance



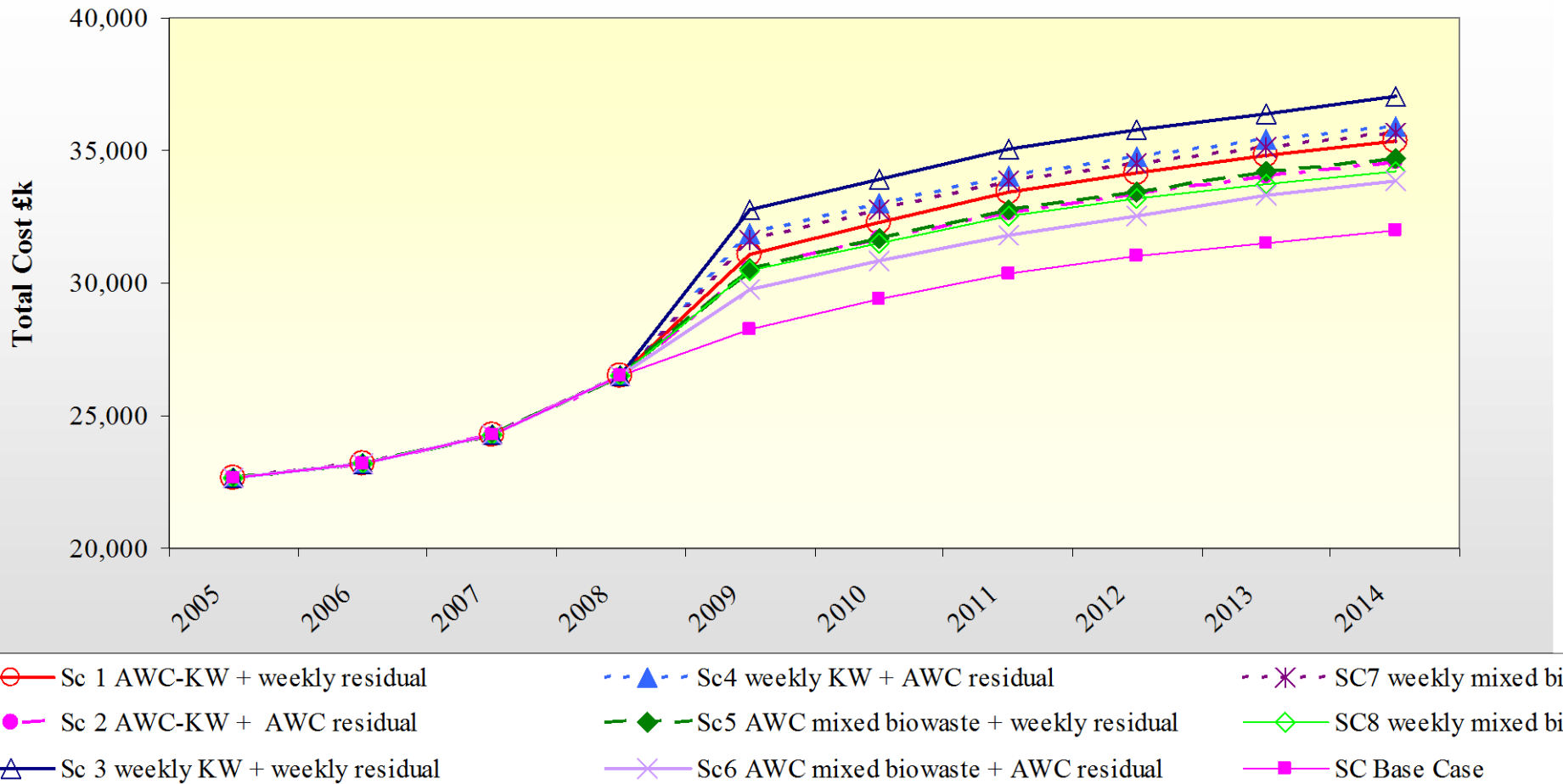
# BMW landfill diversion



# Collection cost (biowaste scenarios)

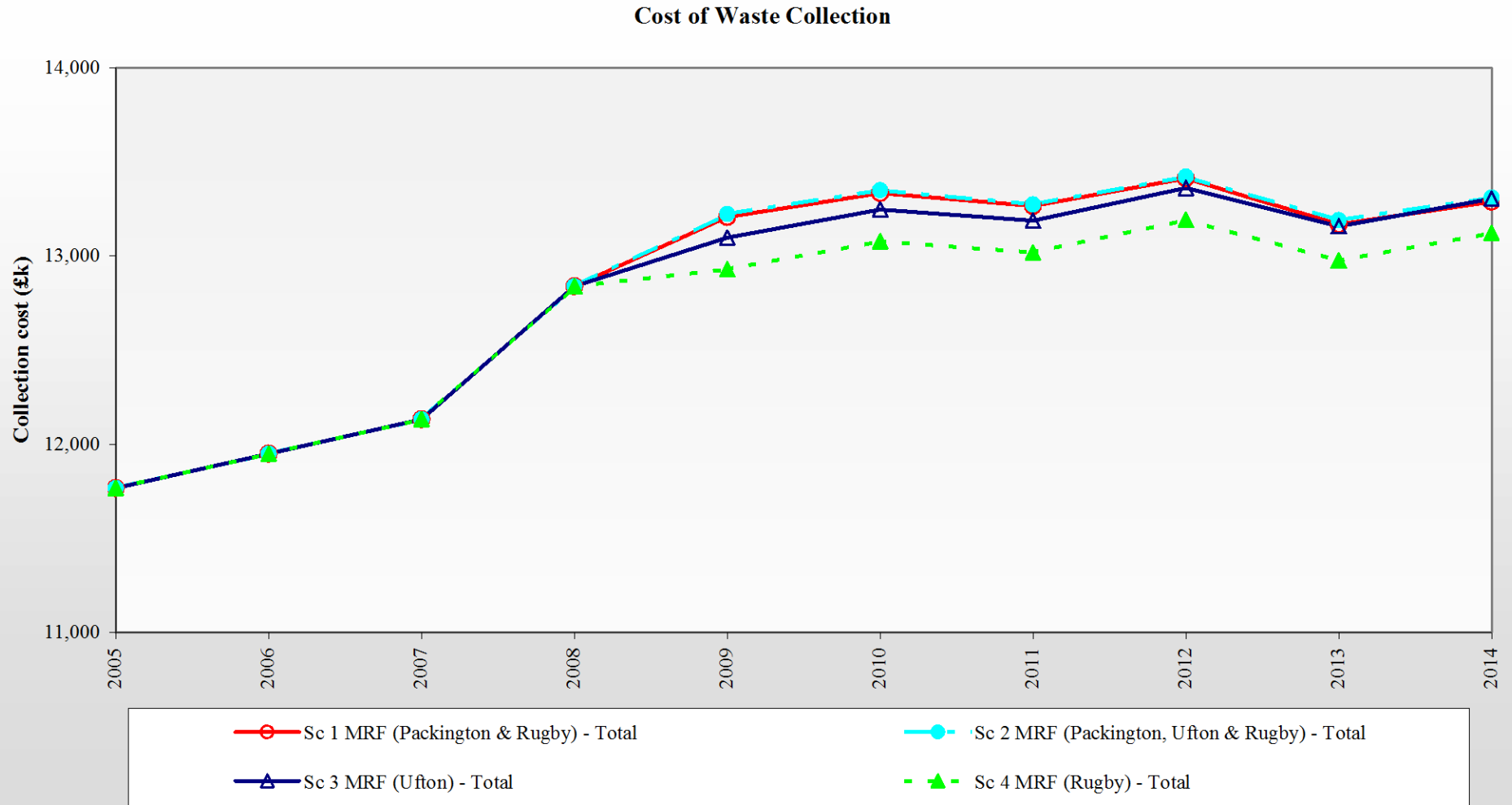


# Overall costs (Biowaste scenarios)





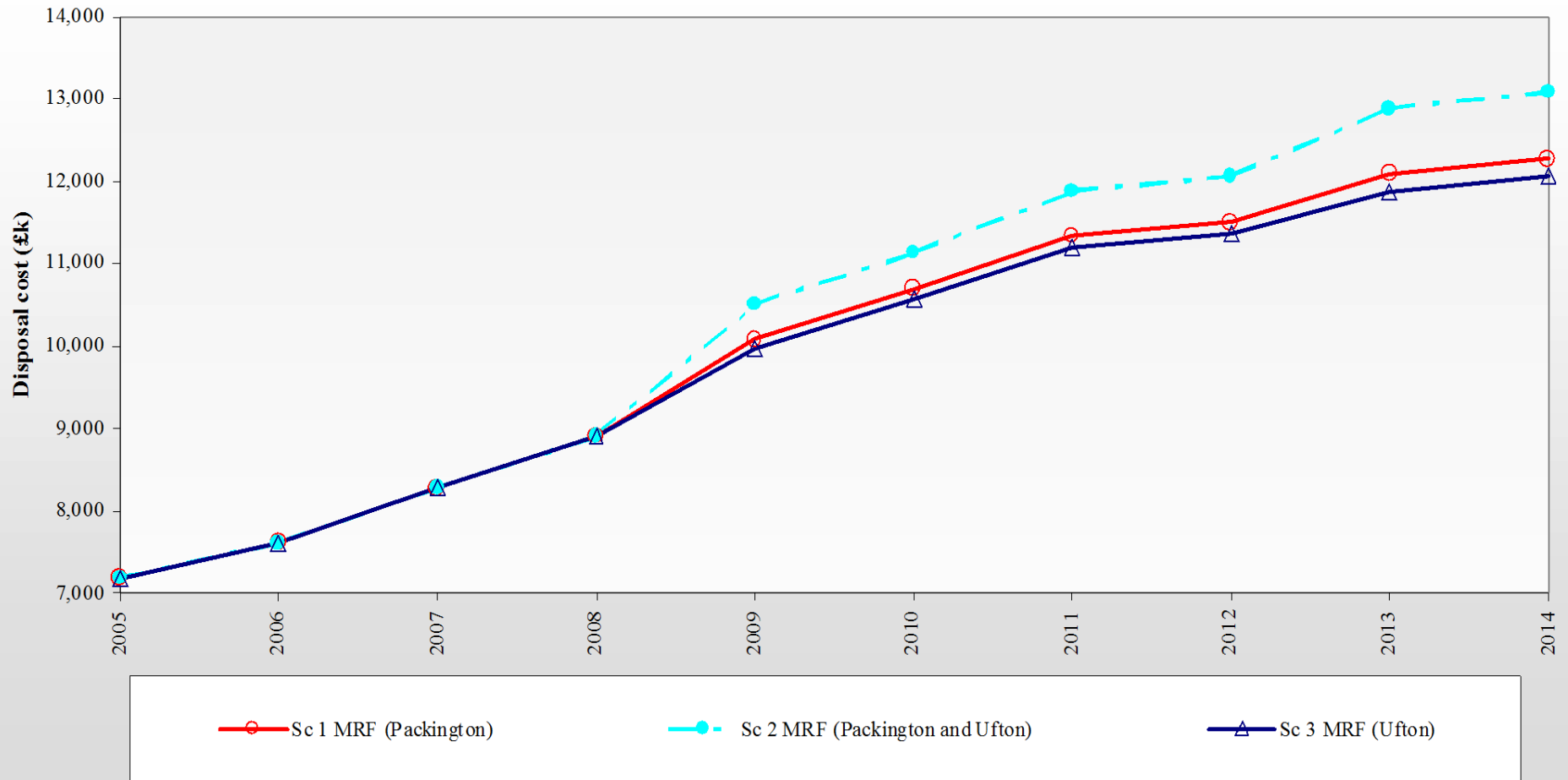
# Collection cost (MRF scenarios)



Based on scenario 6 - mixed biowaste AWC & refuse AWC

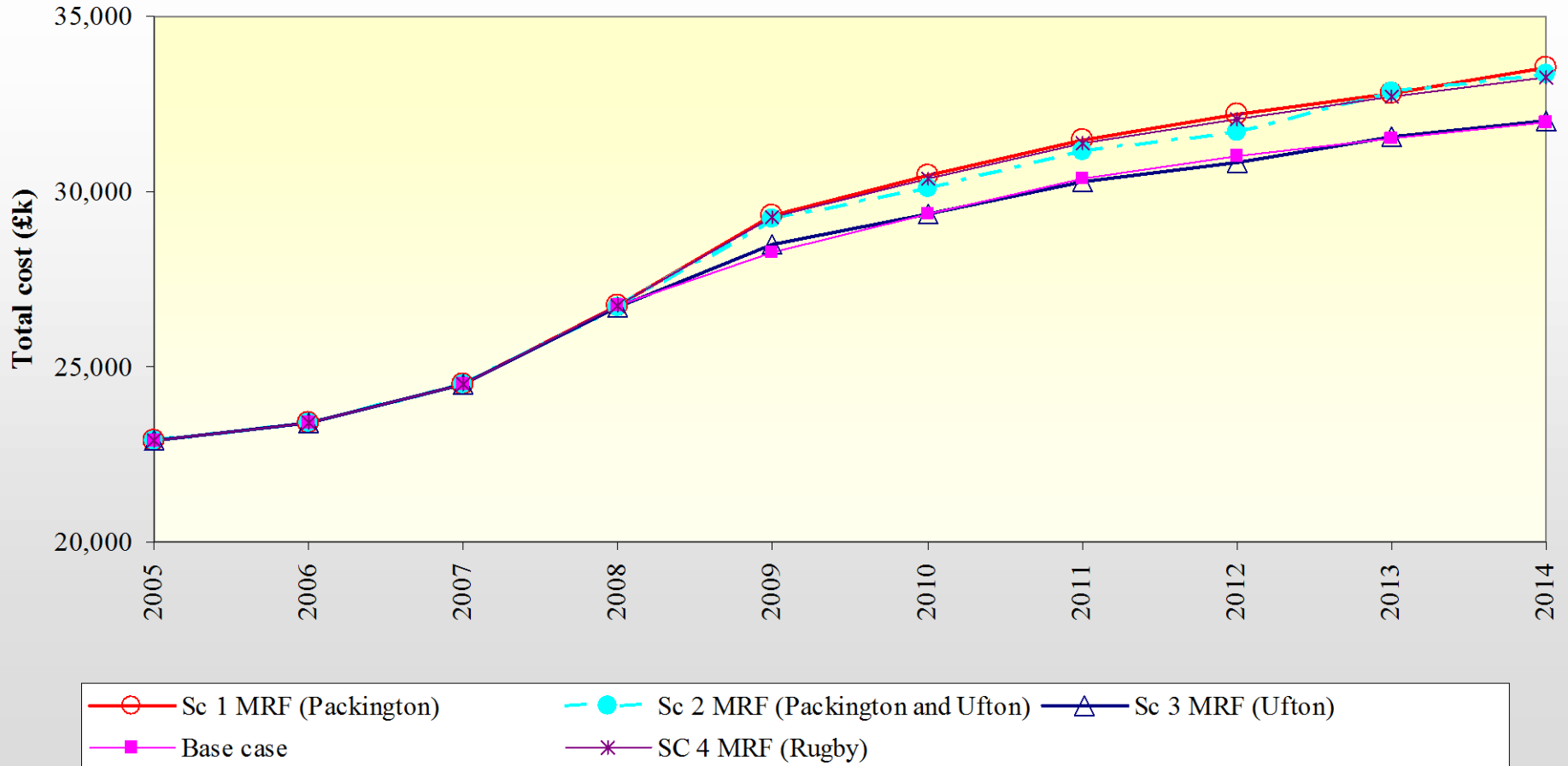
# Processing costs (MRF scenarios)

Cost of Waste Disposal

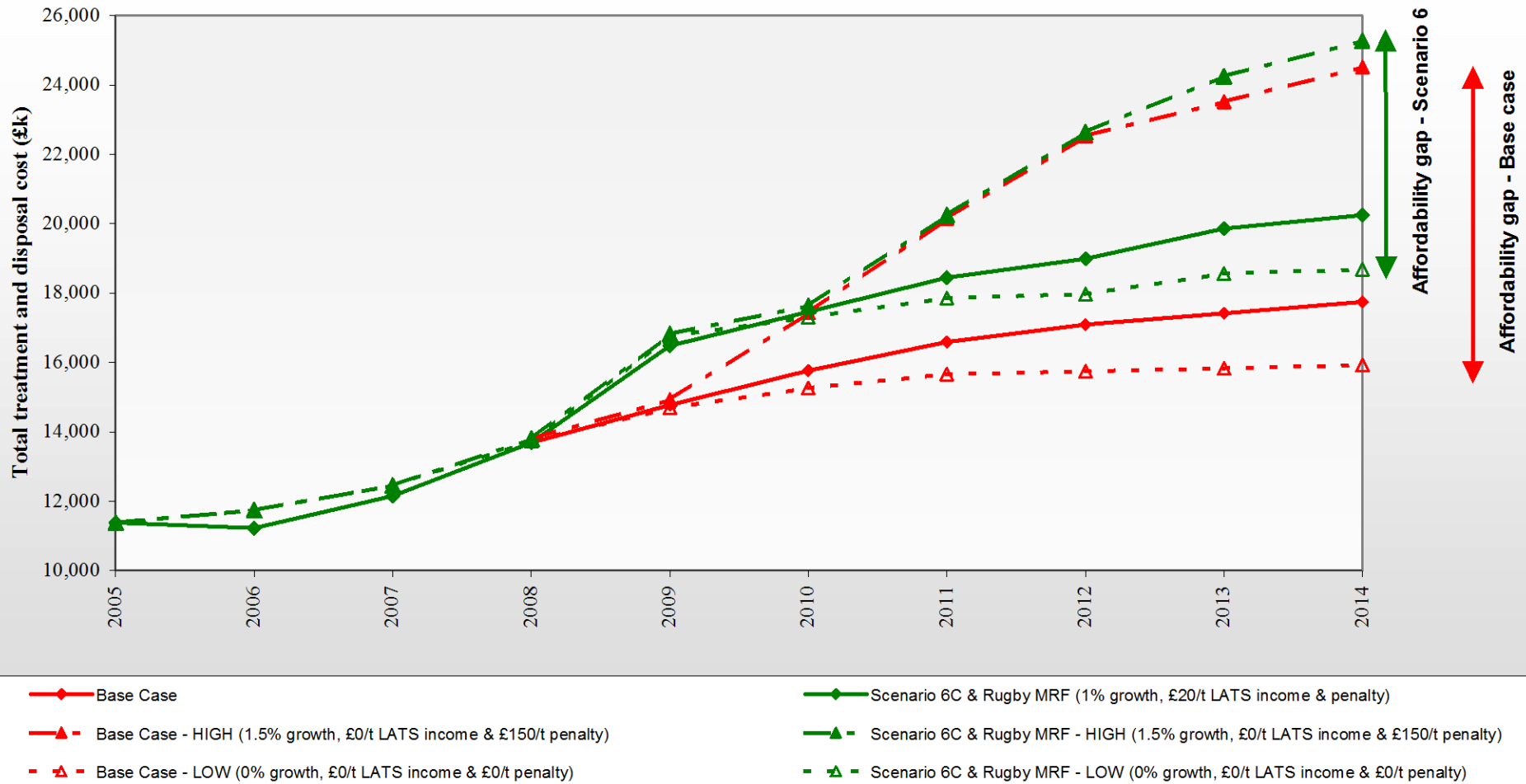


# Total costs (MRF scenarios)

Total Cost of Waste Management



# LATS sensitivity



# What does this all mean

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- Collection of waste is cheaper if done on an alternate weekly basis
  - Reduced costs
  - Improved participation in recycling schemes
  - Highest diversion if organics collected weekly and residual fortnightly
- Overall scenario 6 mixed biowaste and waste collected alternate weeks is the cheapest method of improving recycling rate
- MRF options have only small differences
  - Larger MRF (i.e. single site) is cheaper
  - Ufton site offers the cheapest solution but places higher demands on collection system thereby reducing flexibility
  - Rugby if it can be delivered, offers a suitable compromise
- Deliverability issues are likely to be the deciding factor on sites

# Performance (2014/15)

	Base case	SC6	Change
Recyclate	68,870	74,286	5,416
Green waste	60,517	11,277	-49,240
Biowaste	0	58,361	58,361
Residual	213,691	199,154	-13,924
Total	343,078	343,078	0
Total recycled and composted	129,387	143,924	14,537
<b>Recycling rate</b>	<b>36.4%</b>	<b>41.0%</b>	<b>4.6%</b>
WCA costs (£m)	14.080	12.999	-1.081
WDA costs (£m)	17.896	20.550	2.654
<b>Total costs</b>	<b>31.976</b>	<b>33.549</b>	<b>1.573</b>

# Partnership options

## IVC

Potential Partner	Gate fee (£/t)		
	Biowaste Scenario 5A	Biowaste Scenario 6A	Biowaste Scenario 8A
Warwickshire	43	44	42
Solihull	43	42	41
Tamworth	43	42	41
Solihull and Tamworth	42	41	40

Circa 11 ktpa

## MRF

Potential Partner	MRF capacity -Packington (ktpa)	Gate fee (£/t)
Warwickshire	40	40
Solihull	55	28
Coventry	65	24
Solihull and Coventry	80	19

Circa 42 ktpa

# Way forward

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- Determine if benefits outweigh costs
  - LATS sensitivity/risk
  - Recycling targets, local, national
  - Availability of Coventry EfW capacity
  - Impact on future residual treatment planning applications
- Determine the ability/willingness to move to new collection systems
  - Move to alternate weekly collection
    - Not necessary for infrastructure, but participation rates may suffer and hence plants may be oversized
  - Common/compatible commingled recycle collection
- To agree a protocol/MOU or IAA between WCA and WDA(s)
- Decide of procurement approach
  - Integrated DBFO contract
  - DBF and separate operational contract
  - D&B with prudential borrowing or capital reserves and separate operational contract
  - Specialist providers or single contractor
  - Council/Contractor owned/operated



# Issues to consider

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- Partnership issues
  - Time to develop partnership will delay project
  - Achieves economies of scale
  - Constrains optimal locations
- Sites
  - Are identified sites available?
  - Planning status?
  - Is compulsory purchase an option?
- Certainty in budgeting
  - LATS pricing highly uncertain
- Supply market
  - Capacity
  - Competition issues
    - Are there dominant players locally, will there be sufficient competition to give VfM

# Issues (cont)

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- **Biowaste collection**
  - Mixed or separate
  - Frequency
    - Could increase frequency to improve performance in future
    - IVC plants are modular
  - High diversion or cheapest solution
  - Acceptability to public
- **MRF design issues**
  - Glass – market security,
    - short term
    - long terms
  - Location, consideration of the deliverability of MRF sites
    - Partnership forces Packington

# Conclusions

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- Choices rather than absolutes
- Extra recycling derived from changes in collection
- Improved participation by “pressure” on residual bin
- Collection of mixed garden and kitchen is cheaper
- Collection of kitchen waste separately gets more for recycling
- Centralised MRF optimal, but location is marginal and dependant on deliverability and partnerships
- Recommendation is
  - if you want to increase recycling to progress IVC procurement based on AWC of residual and biowaste
  - Investigate partnership options to achieve saving in operational costs