DEPARTMENT OF ENERGY & CLIMATE CHANGE

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Analytical Annex to the Renewable Heat Incentive Impact Assessment (2011)

Assumptions used in the analysis underpinning the RHI

Introduction

This note presents the key assumptions used in the analysis presented in the Renewable Heat Incentive Impact Assessment. The assumptions are key drivers to various analytical outputs such as resource and subsidy costs, cost-effectiveness assessment, counterfactual costs, technology costs, and the value of CO_2 displaced.

Areas covered include:

- projected final energy demand based on the DECC Updated Energy Projections (UEP40)
- fossil fuel prices;
- electricity and prices for heating products;
- biomass prices; and
- carbon prices

Final Energy Demand (Annex 1):

Final energy demand is based on projected demand across different consumer segments – industry, commercial, public, domestic, agriculture – and are taken from the DECC Energy Model. The baseline is taken to be existing policies as presented in the Low-Carbon Transition Plan 2009, which have been updated to reflect revised analysis and economic growth projections. The data are presented on a net calorific value basis.

Fossil Fuel Prices (Annex 2):

Fossil fuel price assumptions used for the RHI analysis are based on prices forecasts published by DECC in 2009. They are given as 2008 prices, which is a different price base compared to all other fuel and carbon prices presented here. They draw on illustrative scenarios which reflect different patterns of demand and investment in supply. The four fossil fuel scenarios are:

- Low global energy demand (Low)
- Timely investment, moderate global demand (Central)
- High global demand, producers' market power (High)
- High global demand, significant supply constraints (High high)

The latest information on wholesale prices and scenarios can be found in Annex F here:
http://decc.gov.uk/en/content/cms/statistics/projections/projections.aspx

These prices are used to derive electricity and heating product prices for different types of consumer (see below). Fossil fuel price assumptions have been used in the RHI policy Impact Assessment to inform Government of the cost of different policy options, and how sensitive these are to changes in underlying assumptions.

Electricity and Prices for Heating Products (Annex 3):

Electricity and heating product prices are used for two purposes:

- To estimate counterfactual costs to different energy users – ie costs they would have had to incur if they did not take up a renewable heat technology.
- To estimate the value of the financial incentive needed to incentivise users to take-up renewable energy technologies.

Different elements of prices are used for these different purposes and across different consumers. To estimate counterfactual resource costs (costs to the economy of deploying renewable technologies in place of conventional alternatives), we use wholesale or variable costs as representing conventional generation costs.

To estimate the amount of subsidy needed to incentivise uptake of renewable technologies, we use prices faced by the relevant user group – e.g. commercial and industrial sectors. The retail price represents the actual price paid for that fuel which fully incorporates the fixed and variable elements of costs.

The retail gas price series presented in this Annex have been adjusted compared to published retail gas prices to reflect the removal of the "RHI levy" following the Comprehensive Spending Review announcement that the RHI will be funded through general taxation, rather than this levy.

Biomass Prices (Annex 4):

Biomass prices are based on updated analysis undertaken by AEA.

Carbon Price (Annex 5):

The Carbon prices assumed in the impact assessment are consistent with those published in the Inter-departmental Analyst Guidance: 'Valuation of energy use and Greenhouse Gas emissions for appraisal and evaluation'

http://www.decc.gov.uk/en/content/cms/statistics/analysts_group/analysts_group.aspx

Annex 1: Final Energy Demand of fuels used for heating (TWh Net Calorific Value)

	2010	2015	2020	2025
Industry	203.4	204.4	205.1	205.6
Domestic	357.7	306.1	280.0	294.1
Public	51.7	50.5	50.6	49.9
Commercial	65.6	66.6	65.0	66.2
Agriculture	6.3	6.4	6.5	6.6
TOTAL	685	634	607	622

Annex 2: Fossil Fuel Prices – 2009 prices

The tables in this section show the wholesale energy prices which have been used to determine the retail prices in annex 3. Whilst these wholesale prices have not been used in the modelling, they are reproduced here to provide transparency about the underlying fuel price assumptions.

Low global energy demand (Low) fuel price scenario:

	Oil-Brent	Gas-NBP	Coal-ARA
	$/bbl	p/therm	$/tonne
2010	50	33	80
2011	50	33	74
2012	52	33	68
2013	54	33	62
2014	56	33	56
2015	58	33	50
2016	60	33	50
2017	60	33	50
2018	60	34	50
2019	60	34	50
2020	60	34	50
2021	60	34	50
2022	60	34	50
2023	60	34	50
2024	60	34	50
2025	60	34	50

Timely investment, moderate global demand (Central) fuel price scenario:

	Oil-Brent	Gas-NBP	Coal-ARA
	$/bbl	p/therm	$/tonne
2010	70	58	110
2011	71	60	104
2012	72	61	98
2013	73	62	92
2014	74	63	86
2015	75	63	80
2016	76	64	80
2017	77	65	80
2018	78	66	80
2019	79	66	80
2020	80	67	80

2021	81	68	80
2022	82	69	80
2023	83	69	80
2024	84	70	80
2025	85	71	80

High global demand, producers' market power (High) fuel price scenario:

	Oil-Brent	**Gas-NBP**	**Coal-ARA**
	$/bbl	**p/therm**	**$/tonne**
2010	84	70	120
2011	87	72	116
2012	91	75	112
2013	95	78	108
2014	98	80	104
2015	102	83	100
2016	105	86	100
2017	109	88	100
2018	113	91	100
2019	116	94	100
2020	120	97	100
2021	120	97	100
2022	120	97	100
2023	120	97	100
2024	120	97	100
2025	120	97	100

High global demand, significant supply constraints (High high) fuel price scenario:

	Oil-Brent	**Gas-NBP**	**Coal-ARA**
	$/bbl	**p/therm**	**$/tonne**
2010	103	84	130
2011	111	90	130
2012	119	95	130
2013	126	101	130
2014	134	107	130
2015	142	113	130
2016	150	119	130
2017	150	119	130
2018	150	119	130
2019	150	119	130
2020	150	119	130
2021	150	119	130
2022	150	119	130
2023	150	119	130
2024	150	119	130
2025	150	119	130

Annex 3: Electricity and Prices for Heating Products

1. Low global energy demand (Low) fuel price scenario:

	Electricity - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	7.65	7.02	4.62	4.33
2011	7.65	7.02	4.56	4.28
2012	7.95	7.30	4.72	4.43
2013	8.14	7.47	4.71	4.42
2014	8.53	7.83	4.78	4.48
2015	8.88	8.15	4.76	4.47
2016	9.25	8.48	4.79	4.50
2017	9.61	8.82	4.81	4.52
2018	10.15	9.31	4.83	4.54
2019	10.57	9.70	4.88	4.58
2020	10.98	10.07	4.90	4.61
2021	11.35	10.41	4.97	4.67
2022	11.86	10.88	5.07	4.76
2023	12.38	11.36	5.24	4.92
2024	12.78	11.73	5.38	5.06
2025	13.31	12.21	5.55	5.21
2026	13.63	12.51	5.70	5.36
2027	13.93	12.79	5.84	5.49
2028	14.37	13.18	6.27	5.89
2029	14.45	13.26	6.33	5.95
2030	14.52	13.33	6.38	6.00

	Gas - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	1.89	1.73	1.17	1.17
2011	1.89	1.73	1.17	1.17
2012	1.90	1.73	1.18	1.18
2013	1.91	1.74	1.18	1.18
2014	1.92	1.74	1.19	1.19
2015	1.92	1.74	1.19	1.19
2016	1.93	1.74	1.20	1.20

2017	1.93	1.74	1.20	1.20
2018	1.94	1.73	1.20	1.20
2019	1.94	1.71	1.21	1.21
2020	1.93	1.70	1.21	1.21
2021	1.94	1.70	1.22	1.22
2022	1.95	1.71	1.22	1.22
2023	1.96	1.72	1.23	1.23
2024	1.98	1.73	1.23	1.23
2025	1.99	1.75	1.24	1.24
2026	2.00	1.76	1.24	1.24
2027	2.02	1.78	1.25	1.25
2028	2.04	1.79	1.25	1.25
2029	2.05	1.81	1.26	1.26
2030	2.07	1.83	1.27	1.27

	Coal - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	0.91	0.70	0.67	0.58
2011	0.91	0.70	0.67	0.58
2012	0.91	0.70	0.67	0.58
2013	0.91	0.70	0.67	0.58
2014	0.91	0.70	0.67	0.58
2015	0.91	0.70	0.67	0.58
2016	0.91	0.70	0.67	0.58
2017	0.91	0.70	0.67	0.58
2018	0.91	0.70	0.67	0.58
2019	0.91	0.70	0.67	0.58
2020	0.91	0.70	0.67	0.58
2021	0.91	0.70	0.67	0.58
2022	0.91	0.70	0.67	0.58
2023	0.91	0.70	0.67	0.58

2024	0.91	0.70	0.67	0.58
2025	0.91	0.70	0.67	0.58
2026	0.91	0.70	0.67	0.58
2027	0.91	0.70	0.67	0.58
2028	0.91	0.70	0.67	0.58
2029	0.91	0.70	0.67	0.58
2030	0.91	0.70	0.67	0.58

	Oil - p/litre 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	36.28	34.13	23.98	23.51
2011	36.42	34.28	24.01	23.53
2012	37.34	35.31	24.85	24.50
2013	38.23	36.32	25.69	25.46
2014	39.09	37.29	26.53	26.43
2015	39.93	38.25	27.37	27.39
2016	40.77	39.21	28.21	28.35
2017	40.79	39.24	28.24	28.38
2018	40.81	39.26	28.26	28.41
2019	40.83	39.28	28.28	28.44
2020	40.85	39.31	28.30	28.46
2021	40.86	39.33	28.32	28.49
2022	40.88	39.35	28.35	28.52
2023	40.90	39.38	28.37	28.55
2024	40.92	39.40	28.39	28.58
2025	40.94	39.42	28.41	28.60
2026	40.96	39.44	28.43	28.63
2027	40.98	39.47	28.46	28.66
2028	41.00	39.49	28.48	28.69
2029	41.02	39.51	28.50	28.72

2030	41.04	39.54	28.52	28.75

2. Timely investment, moderate global demand (Central) fuel price scenario:

	Electricity - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	10.07	9.24	6.80	6.36
2011	10.25	9.40	6.97	6.52
2012	10.55	9.68	7.20	6.74
2013	10.81	9.92	7.30	6.83
2014	11.19	10.27	7.39	6.92
2015	11.57	10.62	7.49	7.01
2016	11.93	10.95	7.57	7.08
2017	12.30	11.29	7.65	7.16
2018	12.82	11.77	7.71	7.22
2019	13.21	12.12	7.83	7.33
2020	13.57	12.46	7.91	7.41
2021	14.03	12.88	8.02	7.51
2022	14.55	13.35	8.10	7.59
2023	15.19	13.94	8.37	7.84
2024	15.86	14.55	8.69	8.14
2025	18.22	16.72	10.63	9.95
2026	19.84	18.20	11.99	11.22
2027	20.38	18.70	12.25	11.46
2028	20.82	19.10	12.54	11.73
2029	21.17	19.43	12.72	11.90
2030	21.58	19.80	12.95	12.12

	Gas - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	2.90	2.64	2.06	2.06

2011	2.98	2.71	2.14	2.14
2012	3.01	2.74	2.17	2.17
2013	3.04	2.77	2.19	2.19
2014	3.08	2.80	2.22	2.22
2015	3.11	2.82	2.25	2.25
2016	3.14	2.85	2.27	2.27
2017	3.17	2.87	2.30	2.30
2018	3.20	2.89	2.33	2.33
2019	3.23	2.90	2.35	2.35
2020	3.25	2.90	2.38	2.38
2021	3.28	2.93	2.41	2.41
2022	3.32	2.96	2.44	2.44
2023	3.36	3.00	2.46	2.46
2024	3.40	3.03	2.49	2.49
2025	3.43	3.07	2.52	2.52
2026	3.48	3.11	2.55	2.55
2027	3.52	3.15	2.58	2.58
2028	3.56	3.18	2.60	2.60
2029	3.60	3.22	2.63	2.63
2030	3.64	3.27	2.66	2.66

	Coal - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	1.46	1.24	1.22	1.12
2011	1.40	1.19	1.16	1.06
2012	1.35	1.13	1.11	1.01
2013	1.29	1.08	1.05	0.96
2014	1.24	1.02	1.00	0.90
2015	1.18	0.97	0.95	0.85
2016	1.18	0.97	0.95	0.85
2017	1.18	0.97	0.95	0.85

2018	1.18	0.97	0.95	0.85
2019	1.18	0.97	0.95	0.85
2020	1.18	0.97	0.95	0.85
2021	1.18	0.97	0.95	0.85
2022	1.18	0.97	0.95	0.85
2023	1.18	0.97	0.95	0.85
2024	1.18	0.97	0.95	0.85
2025	1.18	0.97	0.95	0.85
2026	1.18	0.97	0.95	0.85
2027	1.18	0.97	0.95	0.85
2028	1.18	0.97	0.95	0.85
2029	1.18	0.97	0.95	0.85
2030	1.18	0.97	0.95	0.85

	Oil - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	44.47	43.49	32.18	32.86
2011	45.02	44.10	32.61	33.36
2012	45.54	44.67	33.04	33.85
2013	46.02	45.21	33.47	34.35
2014	46.46	45.71	33.90	34.84
2015	46.89	46.20	34.34	35.34
2016	47.32	46.69	34.77	35.83
2017	47.75	47.19	35.20	36.33
2018	48.18	47.68	35.63	36.83
2019	48.61	48.17	36.06	37.32
2020	49.04	48.66	36.49	37.82
2021	49.47	49.15	36.93	38.31
2022	49.90	49.64	37.36	38.81
2023	50.33	50.13	37.79	39.30

2024	50.75	50.62	38.22	39.80
2025	51.18	51.11	38.65	40.30
2026	51.61	51.60	39.09	40.79
2027	52.04	52.09	39.52	41.29
2028	52.47	52.58	39.95	41.78
2029	52.90	53.08	40.38	42.28
2030	53.33	53.57	40.81	42.77

3. High global demand, producers' market power (High) fuel price scenario:

	Electricity - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	10.84	9.94	7.81	7.30
2011	11.04	10.13	8.06	7.53
2012	11.42	10.48	8.47	7.92
2013	11.74	10.77	8.75	8.18
2014	12.16	11.16	9.01	8.42
2015	12.51	11.48	9.23	8.63
2016	12.75	11.70	9.42	8.80
2017	13.12	12.04	9.75	9.12
2018	13.36	12.26	9.77	9.14
2019	13.52	12.40	9.89	9.25
2020	13.78	12.65	10.13	9.47
2021	14.48	13.28	10.52	9.84
2022	14.99	13.75	10.60	9.92
2023	15.64	14.35	10.83	10.13
2024	16.51	15.15	11.29	10.56
2025	18.91	17.36	13.15	12.30
2026	19.82	18.19	13.65	12.76
2027	20.68	18.98	14.11	13.19
2028	21.51	19.74	14.54	13.59

2029	21.99	20.18	14.66	13.71
2030	22.78	20.90	15.11	14.13

	Gas - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	3.35	3.05	2.46	2.46
2011	3.45	3.15	2.56	2.56
2012	3.56	3.25	2.65	2.65
2013	3.67	3.34	2.75	2.75
2014	3.78	3.44	2.84	2.84
2015	3.89	3.54	2.94	2.94
2016	4.00	3.63	3.04	3.04
2017	4.11	3.72	3.13	3.13
2018	4.21	3.81	3.23	3.23
2019	4.31	3.89	3.32	3.32
2020	4.41	3.97	3.42	3.42
2021	4.42	3.97	3.42	3.42
2022	4.43	3.97	3.42	3.42
2023	4.43	3.98	3.42	3.42
2024	4.44	3.99	3.42	3.42
2025	4.45	4.00	3.43	3.43
2026	4.47	4.01	3.43	3.43
2027	4.48	4.02	3.43	3.43
2028	4.49	4.04	3.43	3.43
2029	4.50	4.05	3.43	3.43
2030	4.52	4.06	3.43	3.43

	Coal - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	1.55	1.33	1.31	1.21

2011	1.51	1.30	1.27	1.17
2012	1.48	1.26	1.24	1.14
2013	1.44	1.22	1.20	1.10
2014	1.40	1.19	1.16	1.06
2015	1.37	1.15	1.13	1.03
2016	1.37	1.15	1.13	1.03
2017	1.37	1.15	1.13	1.03
2018	1.37	1.15	1.13	1.03
2019	1.37	1.15	1.13	1.03
2020	1.37	1.15	1.13	1.03
2021	1.37	1.15	1.13	1.03
2022	1.37	1.15	1.13	1.03
2023	1.37	1.15	1.13	1.03
2024	1.37	1.15	1.13	1.03
2025	1.37	1.15	1.13	1.03
2026	1.37	1.15	1.13	1.03
2027	1.37	1.15	1.13	1.03
2028	1.37	1.15	1.13	1.03
2029	1.37	1.15	1.13	1.03
2030	1.37	1.15	1.13	1.03

	Oil – p/litre 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	50.21	50.03	37.91	39.41
2011	51.58	51.58	39.16	40.84
2012	53.32	53.55	40.82	42.74
2013	55.03	55.49	42.48	44.63
2014	56.29	56.93	43.73	46.07
2015	57.95	58.83	45.40	47.96
2016	59.20	60.26	46.65	49.40

2017	60.86	62.15	48.31	51.29
2018	62.52	64.04	49.97	53.19
2019	63.77	65.47	51.22	54.62
2020	65.42	67.36	52.88	56.52
2021	65.44	67.39	52.90	56.55
2022	65.46	67.41	52.92	56.58
2023	65.48	67.43	52.95	56.61
2024	65.50	67.46	52.97	56.63
2025	65.52	67.48	52.99	56.66
2026	65.54	67.50	53.01	56.69
2027	65.56	67.53	53.03	56.72
2028	65.58	67.55	53.06	56.75
2029	65.60	67.57	53.08	56.78
2030	65.62	67.60	53.10	56.80

4. High global demand, significant supply constraints (High high) fuel price scenario:

	Electricity - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	12.75	11.70	9.09	8.49
2011	13.24	12.15	9.62	8.98
2012	14.00	12.85	10.32	9.64
2013	14.73	13.51	10.87	10.15
2014	15.51	14.24	11.42	10.67
2015	16.17	14.84	11.85	11.07
2016	16.80	15.41	12.33	11.51
2017	17.06	15.65	12.45	11.63
2018	16.96	15.56	12.04	11.25
2019	17.14	15.73	12.12	11.33
2020	17.28	15.85	12.14	11.35
2021	17.87	16.40	12.26	11.46

2022	18.60	17.07	12.41	11.60
2023	19.78	18.15	13.06	12.21
2024	21.00	19.27	13.69	12.80
2025	23.76	21.81	15.78	14.74
2026	24.99	22.94	16.45	15.37
2027	26.21	24.05	17.12	15.99
2028	27.27	25.03	17.78	16.61
2029	27.09	24.86	17.12	15.99
2030	27.84	25.55	17.43	16.29

	Gas - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	3.91	3.56	2.96	2.96
2011	4.13	3.77	3.17	3.17
2012	4.36	3.98	3.37	3.37
2013	4.60	4.19	3.57	3.57
2014	4.83	4.40	3.78	3.78
2015	5.06	4.61	3.98	3.98
2016	5.29	4.81	4.19	4.19
2017	5.30	4.81	4.19	4.19
2018	5.30	4.80	4.19	4.19
2019	5.29	4.79	4.19	4.19
2020	5.29	4.77	4.19	4.19
2021	5.29	4.77	4.19	4.19
2022	5.30	4.77	4.20	4.20
2023	5.31	4.78	4.20	4.20
2024	5.32	4.79	4.20	4.20
2025	5.33	4.80	4.20	4.20
2026	5.34	4.81	4.20	4.20
2027	5.35	4.82	4.20	4.20
2028	5.36	4.84	4.21	4.21

2029	5.38	4.85	4.21	4.21
2030	5.39	4.86	4.21	4.21

	Coal - p/KWh 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	1.64	1.42	1.40	1.30
2011	1.64	1.42	1.40	1.30
2012	1.64	1.42	1.40	1.30
2013	1.64	1.42	1.40	1.30
2014	1.64	1.42	1.40	1.30
2015	1.64	1.42	1.40	1.30
2016	1.64	1.42	1.40	1.30
2017	1.64	1.42	1.40	1.30
2018	1.64	1.42	1.40	1.30
2019	1.64	1.42	1.40	1.30
2020	1.64	1.42	1.40	1.30
2021	1.64	1.42	1.40	1.30
2022	1.64	1.42	1.40	1.30
2023	1.64	1.42	1.40	1.30
2024	1.64	1.42	1.40	1.30
2025	1.64	1.42	1.40	1.30
2026	1.64	1.42	1.40	1.30
2027	1.64	1.42	1.40	1.30
2028	1.64	1.42	1.40	1.30
2029	1.64	1.42	1.40	1.30
2030	1.64	1.42	1.40	1.30

	Oil - p/litre 2009 prices			
	Retail		Variable	
	Commercial	Industrial	Commercial	Industrial
2010	57.99	58.92	45.69	48.29
2011	61.41	62.80	48.99	52.06
2012	64.79	66.65	52.29	55.83
2013	67.73	69.99	55.18	59.13
2014	71.04	73.77	58.48	62.90
2015	74.34	77.53	61.78	66.67
2016	77.63	81.30	65.08	70.44
2017	77.65	81.32	65.10	70.47
2018	77.67	81.35	65.12	70.49
2019	77.69	81.37	65.15	70.52
2020	77.71	81.39	65.17	70.55
2021	77.73	81.42	65.19	70.58
2022	77.75	81.44	65.21	70.61
2023	77.77	81.46	65.23	70.64
2024	77.79	81.49	65.26	70.66
2025	77.81	81.51	65.28	70.69
2026	77.83	81.53	65.30	70.72
2027	77.85	81.55	65.32	70.75
2028	77.87	81.58	65.35	70.78
2029	77.89	81.60	65.37	70.80
2030	77.91	81.62	65.39	70.83

Annex 4: Biomass Prices for non-domestic installations

Pellets	**Current**			**2020**		
£2010/MWh (exc VAT)	**Low**	**Central**	**High**	**Low**	**Central**	**High**
Bulk	36	41	46	32	45	51
Bagged	44	51	57	40	56	65
Overall	41	48	53	36	50	58

Chips	**Current**			**2020**		
£2010/MWh (exc VAT)	**Low**	**Central**	**High**	**Low**	**Central**	**High**
Industrial/commercial	16	21	33	17	23	27

Annex 5: Carbon prices

£/tCO2 (2009)	**Traded**			**Non-traded**		
	Low	**Central**	**High**	**Low**	**Central**	**High**
2010	7	14	18	26	52	78
2011	7	14	18	26	52	79
2012	8	14	18	27	53	80
2013	8	15	19	27	54	81
2014	8	15	19	27	55	82
2015	8	15	19	28	56	84
2016	8	15	19	28	57	85
2017	8	16	20	29	57	86
2018	8	16	20	29	58	87
2019	8	16	20	30	59	89
2020	8	16	21	30	60	90
2021	11	22	29	31	61	92

2022	14	27	38	31	62	93
2023	16	32	46	32	63	95
2024	19	38	54	32	64	96
2025	22	43	63	33	65	98
2026	24	49	71	33	66	99
2027	27	54	80	34	67	101
2028	30	59	88	34	68	102
2029	32	65	97	35	69	104
2030	35	70	105	35	70	105
2031	38	77	115	38	77	115
2032	42	83	125	42	83	125
2033	45	90	134	45	90	134
2034	48	96	144	48	96	144
2035	51	103	154	51	103	154
2036	55	109	164	55	109	164
2037	58	116	173	58	116	173
2038	61	122	183	61	122	183
2039	64	129	193	64	129	193
2040	68	135	203	68	135	203