Supplementary Materials

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Long-chain *n*-alkane biodegradation coupling to methane production in an enriched culture from production water of a high-temperature oil reservoir

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Table S1 Predicted and measured methane (CH_4) yield from enrichment cultures amended with n-alkane mixtures incubated after 322 and 736 days

Alkanes		Time (days)	Substrate Consumed (mg)	Substrate Consumed (μmol)	Percent of substrate depletion	Predicted CH_4 Yield (μmol) [§]	Measured CH_4 Yield (μmol) [*]	Theoretical production CH_4 (%)
	C_{22}		21.68	68.49	54.2%			
	C_{24}		18.70	55.22	46.8%			
	C_{26}	322	12.46	33.99	31.3%	CH_4 4924.755	CH_4 39.45	CH_4 0.80%
	C_{28}		16.28	41.24	40.7%			
n-alkane	C_{30}		22.72	53.72	56.8%			
mixtures	C_{22}		38.91	122.89	97.3%			
	C_{24}		39.22	115.82	98.0%			
	C_{26}	736	39.58	107.94	99.0%	CH_4 10089.245	CH_4 1680.03	CH_4 16.7%
	C_{28}		39.80	100.82	99.5%			
	C_{30}		39.87	94.29	99.7%			

* Calculated from the difference of measured initial methane production, taking into account the methane production in control group (day 322: 32.98 μmol; day 736: 43.17 μmol).

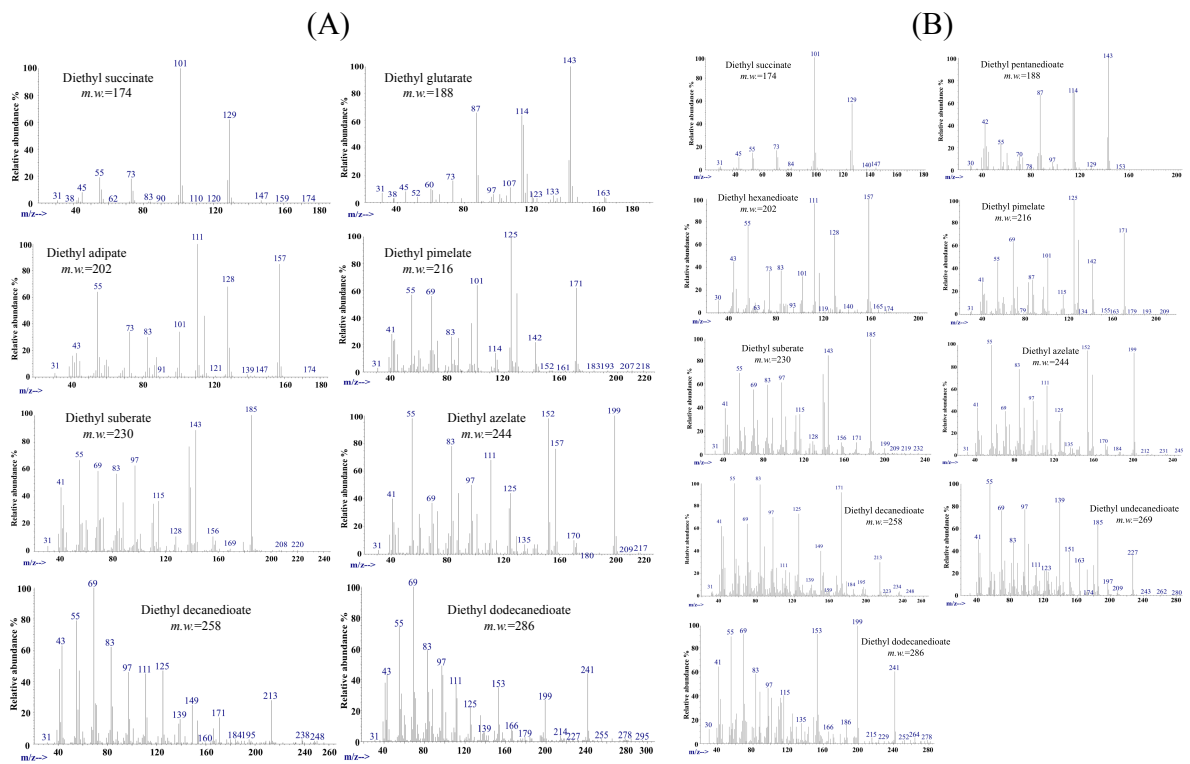§ Calculated using Equations 1-5 (main text) and the calculated mass of substrate consumed.

Fig. S1 Mass spectral profiles of dicarboxylic acids identified in (A) E1 and (B) E2 cultures (Diethyl esterification derivatives).
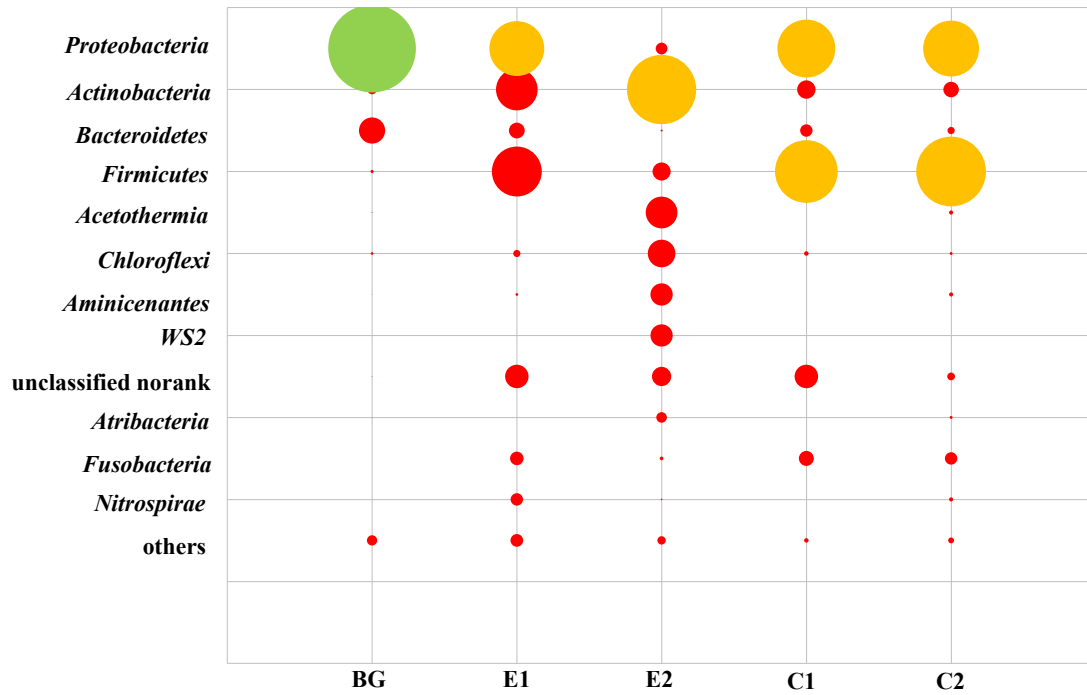
Fig. S2 Bubble plot of bacteria at the phylum level showing the relative abundance in enrichment cultures after incubations (BG: inoculum; E1 and E2: *n*-alkanes-amended cultures at day 322 and 736; C1 and C2: un-amended samples at day 322 and 736; Red: < 30%; Yellow: 30-80%; Green: >= 80%)
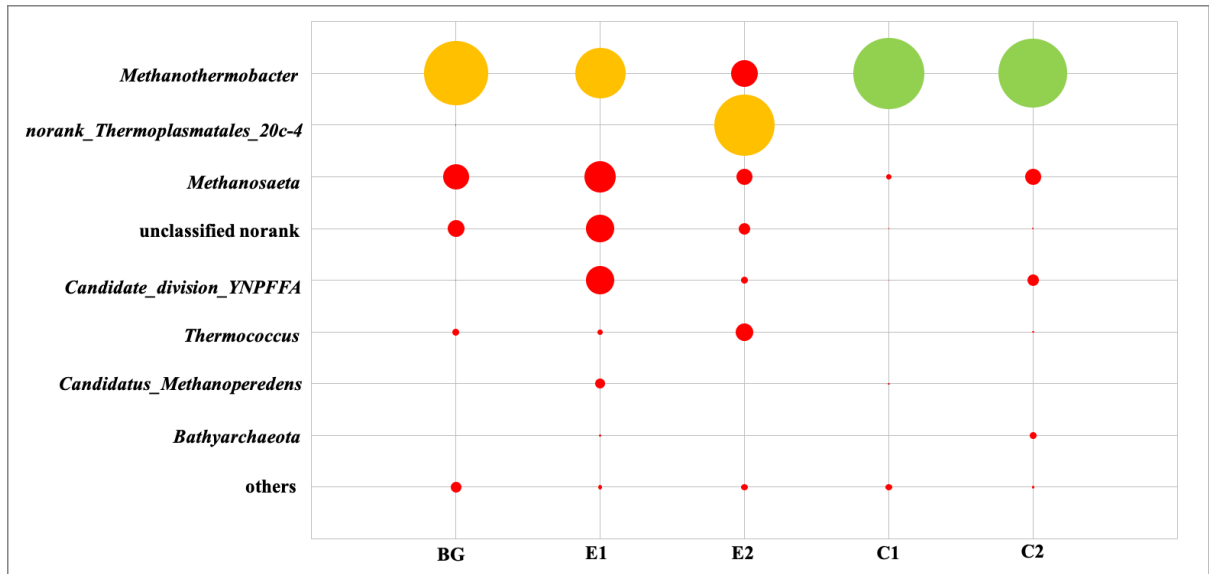
Fig. S3 Bubble plot of archaea at the genus level showing the relative abundance in enrichment cultures after incubations (BG: inoculum; E1 and E2: *n*-alkanes-amended cultures at day 322 and 736; C1 and C2: un-amended samples at day 322 and 736; Red: < 30%; Yellow: 30-80%; Green: >= 80%)